B771-A-297

Rocky Flats Environmental Technology Site

PRE-DEMOLITION SURVEY REPORT (PDSR)

BUILDING 774 1973 ADDITION

REVISION 1

April 28, 2004

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BUILDING 774 1973 ADDITION

REVISION 1

April 28, 2004

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ATTACHMENTS

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ABBREVIATIONS/ACRONYMS

ACM	Asbestos Containing Material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
$DCGL_{EMC}$	Derived Concentration Guideline Level – elevated measurement comparison
$DCGL_W$	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U.S. Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U.S. Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
HEUN	Highly Enriched Uranyl Nitrate
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
PDSR	Pre-demolition survey report
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSA	Removable Surface Activity
RSOP	RFCA Standard Operating Protocol
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity

VOCs	Volatile organic compounds
WSRIC	Waste Stream and Residue Identification and Characterization

EXECUTIVE SUMMARY

A Pre-Demolition Survey was performed to enable compliant disposition and waste management of Rooms 241, 341, and 441 of Building 774 (referred to herein as the Building 774 1973 Addition). Because this Type 3 area will be demolished, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). Building surfaces characterized as part of this PDS include interiors of Rooms 241, 341, 342, 441, and the south stairwell from Room 241 to 441. The remaining portions of Building 774 have been demolished and disposed of as radioactive waste.

The PDS encompassed both chemical and radiological characterization. The characterization was built upon physical, chemical and radiological hazards identified in the facility-specific *B771 and B774 Hazards Characterization Report for the 771 Closure Project.*

Based upon the results of this PDSR, the 774 1973 Addition meets the unrestricted release limits specified in the site Pre-Demolition Survey Plan. These portions of Building 774 can be demolished and the waste managed as PCB Bulk Product waste or as sanitary waste, and the concrete can be used for backfill on-site per the RFCA RSOP for Recycling Concrete. To ensure that the facility remains free of contamination and PDS data remain valid, Level 2 isolation controls are established.

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1 INTRODUCTION

A Pre-Demolition Survey was performed to enable compliant disposition and waste management of the Building 774 1973 Addition. Because this Type 3 building will be demolished, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). The results of this survey shall demonstrate that the Building 774 1973 Addition meets the unrestricted release limits specified in the site Pre-Demolition Survey Plan. Building surfaces characterized as part of this PDS include interiors of Rooms 241, 341, 342, 344, 441, 442, and the south stairwell from Room 241 to 441.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed. Among these is Building 774. This facility no longer supports the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs.

Before this Type 3 facility can be demolished, the Data Quality Objectives (DQOs) for a Pre-Demolition Survey (PDS) must be satisfied; this document presents the PDS results for the Building 774. The PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). The PDS is built upon physical, chemical and radiological hazards identified in the facility-specific *B771 and B774 Hazards Characterization Report for the 771 Closure Project*, dated June 12, 2001, Revision 0.

1.1 PURPOSE

The purpose of this report is to communicate and document the results of the Building 774 PDS effort. A PDS is performed prior to building demolition to define the pre-demolition radiological and chemical conditions of a facility. The pre-demolition conditions are compared with the release limits for radiological and non-radiological contaminants. PDS results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

1.2 SCOPE

This report presents the pre-demolition radiological and chemical conditions of the Building 774 1973 Addition surfaces that are located six feet above final grade and will be free-released and disposed of as sanitary waste or used as backfill per the requirements of the *RFETS, RFCA RSOP for Recycling Concrete*. The original Building 774 structure (including Rooms 202, 203, and 210), the Annex walls/roof, and a 380 ft^2 section of the east exterior wall of Room 241 will be packaged and disposed of as radioactive waste. Rooms 102 and 103 of Building 774, which are located six feet below the final proposed grade level, will remain *in-situ* and have been filled with a concrete aggregate. A PDS will not be performed for any of these areas.

The floors and lower walls of Room 241 which are six feet below final grade based on a gradient line between 3.5 feet above floor level on the north wall, and 11 feet above floor

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level on the south wall, will remain *in-situ* and are not included in the scope of this PDSP.

The plenums in Room 341 and 441 will be removed prior to demolition and disposed of as radioactive waste. Since these plenums were installed during building construction, and these areas were not radiological areas, the removal of the plenums will not change the radiological conditions of the rooms.

All areas that will be packaged and disposed of as radioactive waste will be protected with fixative and verified to have removable levels less than 20 dpm per 100 cm^2 gross alpha activity. Contamination control measures to be used during demolition include water and fixative for dust suppression. In addition, demolition activities will be ceased when wind speeds exceed 15 mph. Close-in air sampling shall be used to ensure the safety of the worker and the public.

1.3 DATA QUALITY OBJECTIVES

The Data Quality Objectives (DQOs) used in designing this PDS meet the minimum requirements specified in Section 2.0 of the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). Refer to section 2.0 of MAN-127-PDSP for these DQOs.

1.3.1 The Problem

The problem involves determining whether or not the survey unit is suitable for unrestricted release in accordance with this plan.

1.3.2 The Decision

The decision is verification that objectives specified in the decommissioning decision document have been met (e.g., certain materials meet unrestricted release criteria for radiological and non-radiological constituents).

1.3.3 Inputs to the Decision

Inputs to the decision include the magnitude and location of data from preceding characterizations, including RLC and In-Process Characterization (IPC), PDS results, decision document action levels, and unrestricted release criteria.

1.3.4 Decision Boundaries

The decision boundaries are the spatial confines of the facility, including rooms and sets of rooms, in two and three dimensions. Interior and exterior surfaces are included, including those below grade. Boundaries may be further defined in RFCA decision documents.

1.3.5 Decision Rules

The following are decision rules to be used during PDS:

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1.3.5.1 Radionuclides

If all radiological survey and scan measurements (and sample measurements, where sample activity is translated to surface activity as described in Section 7.2.3 of the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP)), are below the surface contamination guidelines specified in the Site PDSP, then the related areas and/or volume are considered not radiologically contaminated. The media sample result is calculated by converting volumetric activity (typically reported in pCi/g) to surface activity (dpm/100 cm^2). The volumetric result (pCi/g) is multiplied by the weight of the sample (grams) and by 2.22 (conversion from pCi to dpm).

If any radiological survey or scan measurement exceeds the surface contamination guidelines provided in the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP), the related survey unit must be evaluated per the statistical tests described in section 7.0, Data Analysis and Quality Assessment, of this plan. If any radiological sample measurement (or disposal unit volume) exceeds 100 nanocuries per gram of transuranic material, the related volume of material is considered transuranic (TRU) waste.

1.3.5.2 Hazardous Waste

If decommissioning waste is mixed with or contains a listed hazardous waste, or if the waste exhibits a characteristic of a hazardous waste, then the waste is considered RCRA-regulated hazardous waste in accordance with 6 CCR 1007-3, Parts 261 and 268.

1.3.5.3 Hazardous Substances

If material contains a listed hazardous substance above a decision document action level (e.g., RFCA) and/or the CERCLA reportable quantity (40 CFR 302.4), the material is subject to CERCLA regulation (i.e., remediation and/or notification requirements).

1.3.5.4 Beryllium

If surface concentrations of beryllium are equal to or greater than 0.2 $\mu g/100\ cm^2$, the material is considered beryllium contaminated per 10 CFR 850.

1.3.5.5 PCBs

If material contains PCBs, in a non-liquid state, from the manufacturing process at concentrations ≥50 ppm, the material is considered PCB Bulk Product Waste and subject to the requirements of 40 CFR 761.

If PCB contamination from a past spill/release is suspected, or if a PCB spill is discovered that has not been cleaned up, the associated material is considered PCB Remediation Waste and subject to the requirements of 40 CFR 761. PCB remediation waste includes: materials disposed of prior to April 18, 1978, that are currently at concentrations ≥50 ppm PCBs, regardless of the concentration of the

original spill; materials which are currently at any volume or concentration where the original source was ≥500 ppm PCBs beginning on April 18, 1978, or ≥50 ppm PCBs beginning on July 2, 1979; and materials which are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under 40 CFR 761.

If a waste or item contains PCBs in regulated concentrations, the waste or item is classified as PCB-regulated material and subject to the requirements of 40 CFR 761.

1.3.5.6 Asbestos

If any one sample of a sample set representing a homogeneous medium results in a positive detection (i.e., >1% by volume), then material is considered ACM (40 CFR 763 and 5 CCR 1001-10).

1.3.6 Tolerable Limits on Decision Error

Acceptable false negative *(a)* errors for calculating the number of samples generally range from 1% to 10%. The default value specified by the Site PDSP is 5%, which was assumed for the survey design in this report.

1.3.7 Optimization of Plan Design

Statistically based radiological surveying and sampling will be conducted per the guidance in Appendix B of the RFETS Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). Refer to Section 4.0 of the PDSP for direction of characterization of non-radiological, chemical constituents. For this report, the minimum number of measurement locations is fifteen per survey unit, as calculated based on the guidance in MAN-127-PDSP. The $DCGL_W$ is 100 dpm/100 cm^2 for TSA and media measurements/samples, and 20 dpm/100 cm^2 for RSA measurements. The LBGR was adjusted to obtain a relative shift of two. The estimated standard deviation for each measurement type was calculated based on an assumed coefficient of variation of 30%.

The scan requirements for specific survey unit classifications are as follows:

Class 1:	100% of Accessible Surfaces
Class 2:	10 to 100% Floors/Lower Walls
	10 to 50% Upper Walls/Ceilings

No Class 3 survey units are included in the scope of this report.

2 HISTORICAL SITE ASSESSMENT

A facility-specific Hazards Characterization Report was conducted to understand the facility history and related hazards. The Building 771 Hazards Characterization was

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performed in June 2001 (Refer *B771 and B774 Hazards Characterization Report for the 771 Closure Project*, dated June 12, 2001, Revision 0). Based on the characterization results, radiological contamination was identified in Building 774, and Building 774 was identified as a Type 3 facility. Therefore, a PDS was required before demolition of the facility.

The area included in the scope of this PDSR is referred to herein as the Building 774 1973 Addition. This addition, constructed in 1973, is 54'wide 64'long X 54'high, and located south of the original building. This addition is three stories high with the bottom floor elevation the same as the floor of the second floor of the original building. The concrete tanks that were south of the building were removed as waste and the entrance to the valve vault for these tanks became the entrance to the new addition.

The first and second floors of the 1973 Addition Building, Room 241, housed four reagent tanks and four batching tanks for precipitation. Radioactive contamination was present in these tanks. The third floor (Rooms 341) housed a ventilation filter plenum that supported Building 774 glovebox operations. Radioactive contamination did exist in this plenum, though there is no record of any contamination events in Room 341 proper. The fourth floor (Room 441) housed a room air exhaust and recirculation plenum. Low levels of radioactive contamination was present in the plenum, though there is no record of any contamination event in Room 441 proper.

Rooms 341, 342, and 441 are classified as Class 2 survey units (771056, 771058, 771057, respectively) based on their contamination potential, per Section 3.0 of the PDSP. The entrance vestibules to rooms 341 and 441 (rooms 344 and 442) are included in these survey units.

Room 241 and the south stairwell (survey units 771054 and 771048, respectively) are classified as Class 1 based on their contamination potential, per Section 3.0 of the PDSP.

The original Building 774 structure (including Rooms 202, 203, and 210), the Annex walls/roof, and a 380 ft^2 section of the east exterior wall of Room 241 will be packaged and disposed of as radioactive waste. Rooms 102 and 103 of Building 774, which are located six feet below the final proposed grade level, will remain *in-situ* and have been filled with a concrete aggregate. A PDS will not be performed for any of these areas.

This report documents the results of the PDS for Rooms 241, 341, and 441 (areas within 6' of Final Grade). The hazards characterization results and historical review (refer to Attachment H) were used to identify PDS data gaps and needs, and to develop radiological and chemical PDS characterization packages. Characterization documentation is located in the Building 771 Characterization Project files.

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

The Building 774 1973 Addition was characterized for radiological hazards per the PDSP. Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces. Measurements were performed to evaluate the contaminants of concern (weapons-grade plutonium isotopes). Based upon a review of the characterization data, historical and process knowledge, in-process survey data, building walk-downs, and the Site Pre-Demolition Survey Plan

(MAN-127-PDSP), a Radiological Characterization Plan was developed during the planning phase that describes the minimum survey requirements (refer to survey packages 771048, 771054, 771056, 771057, and 771058). A Survey Unit Overview Map is presented in Attachment A. Based on hazard characterization data and historical and process knowledge, transuranic isotopes are the primary contaminants of concern in Buildings 771/774. Therefore, the PDS was performed to the transuranic PDS unrestricted release criteria. Individual radiological survey unit packages are maintained in the Building 771 Characterization Project files.

The Building 774 1973 Addition survey unit packages was developed in accordance with Radiological Safety Practices (RSP) 16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure.* Total surface activity (TSA), removable surface activity (RSA), and media samples were collected in accordance with RSP 16.02 *Radiological Surveys of Surfaces and Structures.* Radiological survey data were verified, validated and evaluated in accordance with RSP 16.04, *Radiological Survey/Sample Data Analysis.* Quality control measures were implemented relative to the survey process in accordance with RSP 16.05, *Radiological Survey/Sample Quality Control.*

Per the reference procedures, the required number of measurement locations is fifteen (15) per 100 square-meters of floor area for Class 1 survey units, and fifteen (15) per 1000 square meters of floor area for Class 2 survey units. Scans were required on 100% of surfaces for Class 1 survey units, and 100% of floors/lower walls and 10% of upper walls/ceiling for Class 2 survey units.

Radiological survey data, statistical analysis results, survey locations, and radiological scan maps are presented in Attachments B, C, D, E, and F, *Radiological Data Summary and Survey Maps.*

Building 774 South Stairwell – (Survey Unit 771048)
The South Stairwell of Building 774 was classified as a Class 1 survey unit. The classification was based on the process history of the area (proximity of the stairwell to Room 241, an existing Class 1 survey unit). A total of 15 random TSA and RSA measurements, and 15 media samples were collected. Surface scans of 128m^2 (100% of total surface area) were performed.

All scans, surveys, and media sample results in survey unit 771048 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 771048 are presented in Attachment B, *Survey Unit 771048 Radiological Data Summary and Survey Map.*

Building 774 Room 241 – (Survey Unit 771054)
Room 241 is classified as a Class 1 survey unit. The classification was based on the process history of the area, and the identification of alpha activity in excess of the $DCGL_W$ during characterization surveys/media sampling. Media sampling performed during the characterization phase identified elevated activity in surface media (paint) on the floors only (refer to the *B771 and B774 Hazards Characterization Report for the 771 Closure Project).* Because the floors are not included in the scope of this PDSR, paint removal was not required on the remaining surfaces.

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Per the Building 771 Decommissioning Operations Plan (DOP), the floors and lower walls of Room 241 that will remain six feet below final grade (based on a gradient line between 3.5 feet above floor level on the north wall and 11 feet above floor level on the south wall) will remain *in-situ* and are not included in the scope of this PDSP. The fixed contamination levels in this area range from 10 to 3000 dpm/100 cm^2. The maximum in-situ gamma-spectroscopy results are 5.7 nCi/g (surface) and 0.05 nCi/g (volumetric). A poly coating, as well as a protective layer of soil, shall be placed on the 241 pad to prevent cross-contamination of rubble during demolition.

In addition, a 380 ft^2 section of the east exterior wall of Room 241 will be packaged and disposed of as radioactive waste (refer to Contact Record dated March 25, 2004). Fixed contamination levels range from 600 to 15,000 dpm/100 cm^2 on this section of wall. A spray fixative has been applied to this wall to prevent the release of contamination during demolition.

A total of 42 random TSA and RSA measurements were collected, based on a floor surface area of 278 m^2. Surface scans of 1112 m^2 of the room surfaces (100% of total area) were also performed.

All paint has been removed from required areas (i.e., areas above the six feet below final grade line), with the exception of the ceiling, which is an original coating. Samples collected during RLC collaborate that the 241 ceiling is coated with original paint, given that no activity in excess of the applicable DCGLs was detected.

Four (4) conduit penetrations in the north wall of Room 241 were found to have elevated removable activity ranging from 21 to 54 dpm/100 cm^2. Fixative was applied to the interior surfaces and the penetrations will be removed and disposed of as radioactive waste.

All scans, surveys, and media sample results in survey unit 771054 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 771054 are presented in Attachment C, *Survey Unit 771054 Radiological Data Summary and Survey Map.*

Building 774 Room 341 – (Survey Unit 771056)

Room 341 is classified as a Class 2 survey unit. The classification was based on the low potential for contamination based on process history and characterization results (all results less than the $DCGL_W$ of 100 dpm per 100 cm^2 – refer to the *B771 and B774 Hazards Characterization Report for the 771 Closure Project*). Surface scans of 407 m^2 (39% of total area) were also performed. A total of 15 random TSA and RSA measurements, and 15 media samples were collected.

All scans, surveys, and media sample results in survey unit 771056 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 771056 are presented in Attachment D, *Survey Unit 771056 Radiological Data Summary and Survey Map.*

FP-202, a glovebox exhaust plenum, remains in Room 341. Fixed contamination remains in the first stage of this plenum, with hot spots up to ~100,000 dpm/100 cm^2. A fixative

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has been applied to all interior surfaces of this plenum, and removable alpha activity verified to be less than 20 dpm/100 cm^2. This plenum shall be sealed and removed in one piece from Room 341. Shearing of the plenum into manageable pieces (for placement into the radioactive waste containers) shall take place on a pad inside the 774 demolition area The removal/size reduction of the plenum will not impact the radiological status of Room 341.

Building 774 Room 441 – (Survey Unit 771057)

The interior of room 441 is classified as a Class 2 survey unit. The classification was based on the low potential for contamination based on process history and characterization results (all results less than the $DCGL_W$ of 100 dpm per 100 cm^2 – refer to the *B771 and B774 Hazards Characterization Report for the 771 Closure Project*). Media sampling performed during the characterization phase identified elevated activity in surface media (paint) on the floors only (refer to the *B771 and B774 Hazards Characterization Report for the 771 Closure Project).*

A total of 15 random TSA and RSA measurements, and 17 media samples were collected. Surface scans of 387m^2 (33% of total area) were also performed. Seventeen (17) media samples were collected because the number of required locations was based on the total surface area of the room during RLC. Per the requirements of the PDSP, only fifteen (15) TSA/RSA locations were actually required (based on the floor surface area of the room).

All scans, surveys, and media sample results in survey unit 771057 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 771057 are presented in Attachment E, *Survey Unit 771057 Radiological Data Summary and Survey Map.*

FP-201, a room air exhaust plenum, remains in Room 441. Low levels of fixed contamination remain in the plenum up to ~500 dpm/100 cm^2. A fixative has been applied to all interior surfaces of this plenum, and removable alpha activity verified to be less than 20 dpm/100 cm^2. This plenum shall be removed in one piece from Room 441. Shearing of the plenum into manageable pieces (for placement into the radioactive waste containers) shall take place on a pad inside the 774 demolition area. The removal/size reduction of the plenum will not impact the radiological status of Room 441.

Building 774 Room 342 – (Survey Unit 771058)

Room 342 was classified as a Class 2 survey unit. The classification was based on the low potential for contamination based on process history and characterization results (refer to the *B771 and B774 Hazards Characterization Report for the 771 Closure Project*). Media sampling performed during the characterization phase identified two spots of elevated activity in surface media (paint) on the floor at 156 dpm/100 cm^2 and 546 dpm/100 cm^2 (refer to the *B771 and B774 Hazards Characterization Report for the 771 Closure Project).* All other media sample locations, as well as TSA/RSA data, was less than the $DCGL_W$ of 100 dpm per 100 cm^2. Contamination on the floors is expected based on the process history of the room, which housed the upper portions of four tanks

anchored onto the floor of Room 241. Therefore, paint removal was required on the floors in this room. A total of 15 random TSA and RSA measurements, and 15 media samples were collected.

Surface scans of 108 m^2 (44% of the total surface area) were also performed (100% of floors/lower wall surfaces and 17% of upper walls/ceiling surfaces). Because residual contamination was only expected on the floor of the survey unit, and the fact that Room 342 meets the Class 1 survey unit size restrictions (i.e., less than 100 m^2 floor area), the decision was made to increase the scan requirement for the floor/lower walls to 100% of the surfaces versus reclassifying the entire survey unit to Class 1. An example of this method is discussed on page 8-24 of the MARSSIM.

All scans, surveys, and media sample results in survey unit 771058 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 771058 are presented in Attachment F, *Survey Unit 771058 Radiological Data Summary and Survey Map.*

4 CHEMICAL CHARACTERIZATION AND HAZARDS

Based on a thorough review of historical and process knowledge, visual inspections, and personnel interviews, no additional chemical hazard sampling requirements were identified.

4.1 Asbestos

Asbestos containing building material is not present in building 774.

4.2 Beryllium (Be)

Room 241 was posted/controlled as a Beryllium Regulated Area (BRA) during plasma-arc size reduction of the tanks. Therefore, per the Beryllium Sampling Decision Tree in the PDSP, twenty-one (21) random beryllium smear samples were collected from this room, in accordance with the PDSP and the *Beryllium Characterization Procedure,* PRO-536-BCPR, Revision 0, September 9, 1999.

Rooms 341 and 441 of Building 774 are not and have never been a beryllium-controlled area. However, current beryllium data is not available for these areas. Therefore, per the Beryllium Sampling Decision Tree in the PDSP, six (6) biased beryllium smear samples were collected from each room, in accordance with the PDSP and the *Beryllium Characterization Procedure,* PRO-536-BCPR, Revision 0, September 9, 1999.

All beryllium smear sample results were less than the investigative limit of 0.1 $\mu g/100cm^2$. PDS beryllium laboratory sample data and location maps are contained in Attachment I, *Chemical Data Summaries and Sample Maps.*

4.3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]

Based upon the *B771 and B774 Hazards Characterization Report, 771 Closure Project,* Revision 0, dated June 12, 2001, personnel interviews, facility walk-downs, and historical

process knowledge (WSRIC/WEMS), Rooms 241, 341, and 441 of Building 774 did not contain hazardous waste storage units. A visual inspection of the building by 771/774 Industrial Hygiene personnel verified the absence of hazardous waste residuals and/or stains on the floor/concrete slab, walls, or ceiling. As a result of these observances, it has been determined that no sampling for RCRA/CERCLA constituents is required. The concrete generated from the demolition of the areas included in the scope of this report can be used for onsite recycling in accordance with the Concrete Recycling RSOP.

4.4 Polychlorinated Biphenyls (PCBs)

Based on historical knowledge, personnel interviews, and 771/774 Environmental Compliance Personnel walk-downs, the Rooms 241, 341, and 441 of Building 774 never used/transferred free flowing/exposed PCB's. At one time the facility may have used PCB ballasts in its fluorescent light fixtures, however, all of these have been removed, and compliantly disposed of, resulting in no impact on demolition activities in this area.

Per the *B771 and B774 Hazards Characterization Report for the 771 Closure Project*, PCBs are present in some applied paints (i.e., on several walls and floors within the B771 and B774 Contamination Areas, and within the 771/776 Tunnel). Because additional paint sampling was not performed in Rooms 241, 341, and 441, and because painted surfaces remain in the area, any painted debris generated during demolition that is not recycled on-site will be disposed of a PCB Bulk Product waste.

5 PHYSICAL HAZARDS

Physical hazards associated with Building 774 are common to standard industrial environments, and include hazards associated with utilities. There are no other unique hazards associated with the facility. The facility has been relatively well maintained and is in good physical condition, therefore, does not present hazards associated with building deterioration.

Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices.

6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of Building 774 1973 Addition, and consequent waste management, is of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments B, C, D, E and F) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original project DQOs.

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate:

- the *number* of samples and surveys;
- the *types* of samples and surveys;

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- the sampling/survey process as implemented "in the field"; and
- the laboratory analytical process, relative to accuracy and precision considerations.

Details of the DQA are presented in Attachment G. The DQA Checklists are provided in the individual survey unit packages (located in the Building 771 Characterization Files).

The Minimum Detectable Activity (MDA) for each PDS instrument was determined *a priori* based on typical parameters (background, efficiency, and count time). A list of radiological field instrumentation and associated sensitivities is presented in Table 1.

Table 1
PDS Radiological Field Instrumentation and Minimum Detectable Activities

Model	Measurement Type	MDA (dpm/100 cm^2)
NE Electra DP6	TSA	48
Eberline SAC-4	Removable (Smears)	10
NE Electra AP6	Scans	300

7 DECOMMISSIONING WASTE TYPES

The demolition and disposal of Building 774 will generate a variety of wastes. Concrete can be used as backfill onsite in accordance with the RFCA RSOP for Recycling Concrete.

8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, the Building 774 1973 Addition is classified as an RFCA Type 3 facility pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999). Based upon the results of this PDSR, the 774 1973 Addition meets the unrestricted release limits specified in the site Pre-Demolition Survey Plan and is ready for demolition. The PDS for the Building 774 1973 Addition was performed in accordance with the DDCP and PDSP, all PDSP DQOs were met, and all data satisfied the PDSP DQA criteria.

A facility walkdown and historical review indicates that no RCRA/CERCLA constituents exist in the B774 Area (refer to Attachment H, Historical Review). Any painted debris generated during demolition that is not recycled on-site will be disposed of a PCB Bulk Product waste.

Radiological contamination in excess of the PDSP Table 7-1 limits was not detected in the Building 774 1973 Addition. The applicable limits are as follows:

Table 2
PDSP Table 7-1 Surface Contamination Limits

Radionuclides	**Total Average (dpm/100 cm^2) (1) ($DCGL_W$)**	**Total Maximum (dpm/100 cm^2) (2) ($DCGL_{EMC}$)**	**Removable (dpm/100 cm^2) ($DCGL_W$)**
Transuranics	100	300	20

(1) Measurements of average contamination should not be averaged over an area of more than 1 m^2.
(2) The maximum contamination level applies to an area of not more than 100 cm^2.

Based upon this PDSR, the Building 774 1973 Addition can be demolished and the waste managed as sanitary, and the concrete can be used for backfill on-site per the RFCA RSOP for Recycling Concrete, with the exception of the following areas:

1) The floors and lower walls of Room 241 which are six feet below final grade based on a gradient line between 3.5 feet above floor level on the north wall, and 11 feet above floor level on the south wall, will remain *in-situ* and are not included in the scope of this PDSP.

2) A 380 ft^2 section of the east exterior wall of Room 241 will be packaged and disposed of as radioactive waste (refer to Contact Record dated March 25, 2004).

To ensure that the facility remains free of contamination and that PDS data remain valid, Level 2 isolation controls have been established.

9 REFERENCES

B771 and B774 Hazards Characterization Report for the 771 Closure Project, dated June 12, 2001, Revision 0.

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DOE Order 5400.5, *Radiation Protection of the Public and the Environment*

DOE Order 414.1A, *Quality Assurance*

EPA, 1994. *The Data Quality Objective Process,* EPA QA/G-4.

K-H, 1999. *Decommissioning Program Plan*, June 21, 1999.

MAN-131-QAPM, *Kaiser-Hill Team Quality Assurance Program*, Rev. 1, November 1, 2001.

MAN-076-FDPM, *Facility Disposition Program Manual*, Rev. 3, January 1, 2002.

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MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities*, Rev. 1, July 15, 2002.

MARSSIM - *Multi-Agency Radiation Survey and Site Investigation Manual* (NUREG-1575, EPA 402-R-97-016).

PRO-475-RSP-16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure,* Rev. 1, May 22, 2001.

PRO-476-RSP-16.02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures*, Rev. 2, March 10, 2003.

PRO-477-RSP-16.03, *Radiological Samples of Building Media*, Rev. 1, May 22, 2001.

PRO-478-RSP-16.04, *Radiological Survey/Sample Data Analysis for Final Status Survey*, Rev. 1, May 22, 2001.

PRO-479-RSP-16.05, *Radiological Survey/Sample Quality Control for Final Status Survey*, Rev. 1, May 22, 2001.

PRO-563-ACPR, *Asbestos Characterization Procedure,* Revision 0, August 24, 1999.

PRO-536-BCPR, *Beryllium Characterization Procedure*, Revision 0, August 24, 1999.

RFETS, Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition.

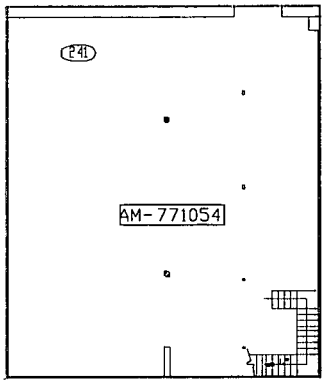
RFETS, Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal.

RFETS, RFCA RSOP for Recycling Concrete, September 28, 1999

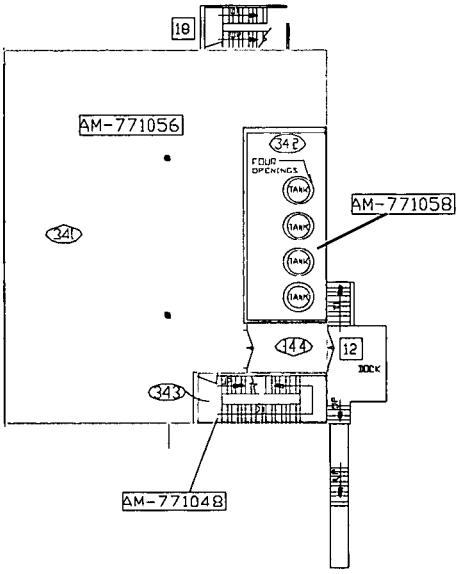
ATTACHMENT A

Survey Unit Overview Map

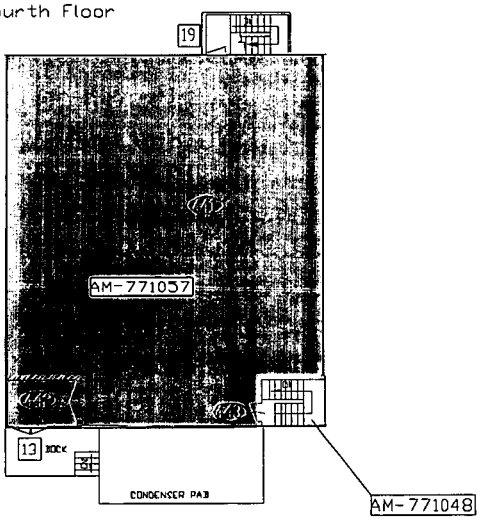
Second Floor



Third Floor



Fourth Floor



ATTACHMENT B

Survey Unit 771048
Radiological Data Summary and Survey Map

Survey Area: AM	Survey Unit: 771048	Building: 774
Description: Rooms 343 and Room 443 (Stairwell)		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Number Required: 15 Number Performed: 15 Number QC Performed: 2

Alpha - Random

Maximum:	41.0 dpm/100cm²
Minimum:	1.4 dpm/100cm²
Mean:	22.1 dpm/100cm²
Standard Deviation:	11.0
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

* Biased TSA and QC measurements not included in above statistics.

Removable Surface Activity Measurements

Number Required: 15 Number Performed: 15

Alpha - Random

Maximum:	6.1 dpm/100cm²
Minimum:	-0.9 dpm/100cm²
Mean:	1.6 dpm/100cm²
Standard Deviation:	2.1
Transuranic DCGL$_W$:	20.0 dpm/100cm²

* Biased RSA measurements not included in above statistics.

Media Sample Results

Number Required: 15 Number Collected: 15

Uranium

Maximum:	NA dpm/100cm²
Minimum:	NA dpm/100cm²
Mean:	NA dpm/100cm²
Standard Deviation:	NA
Uranium DCGL$_W$:	5,000 dpm/100cm²
Uranium DCGL$_{EMC}$:	15,000 dpm/100cm²

Transuranic

Maximum:	75 dpm/100cm²
Minimum:	0 dpm/100cm²
Mean:	7 dpm/100cm²
Standard Deviation:	19
Transuranic DCGL$_W$:	100 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300 dpm/100cm²

Survey Area: AM | **Survey Unit:** 771048 | **Building:** 774

Description: Rooms 343 and Room 443 (Stairwell)

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	516572	03/27/04	Electra	1367	DP-6	06/17/04	0.220	NA	48.0	NA	TSA
2	702381	03/27/04	Electra	391	DP-6	08/20/04	0.221	NA	48.0	NA	TSA
3	516572	03/28/04	SAC-4	1185	NA	08/09/04	0.330	NA	10.0	NA	RSA
4	516572	03/28/04	SAC-4	1053	NA	07/22/04	0.330	NA	10.0	NA	RSA
5	516572	03/28/04	SAC-4	820	NA	08/18/04	0.330	NA	10.0	NA	RSA
6	516572	03/28/04	SAC-4	815	NA	08/09/04	0.330	NA	10.0	NA	RSA

Survey Area: AM	Survey Unit: 771048	Building: 774
Description: Rooms 343 and Room 443 (Stairwell)		

Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
771048PRP-N001	3	-0.3	N/A	
771048PRP-N002	3	1.2	N/A	
771048PRP-N003	4	0.6	N/A	
771048PRP-N004	6	-0.0	N/A	
771048PRP-N005	5	1.5	N/A	
771048PRP-N006	4	2.1	N/A	
771048PRP-N007	5	-0.0	N/A	
771048PRP-N008	5	-0.0	N/A	
771048PRP-N009	6	-0.0	N/A	
771048PRP-N010	5	4.5	N/A	
771048PRP-N011	4	0.6	N/A	
771048PRP-N012	4	-0.9	N/A	
771048PRP-N013	5	6.1	N/A	
771048PRP-N014	4	3.6	N/A	
771048PRP-N015	3	4.2	N/A	

Comments:

Survey Area: AM	Survey Unit: 771048	Building: 774
Description: Rooms 343 and Room 443 (Stairwell)		

Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
771048QRP-N001	1	19.8	N/A	
771048PRP-N001	2	19.5	N/A	
771048PRP-N002	1	28.7	N/A	
771048QRP-N002	2	-13.4	N/A	
771048PRP-N003	1	22.8	N/A	
771048PRP-N004	1	26.0	N/A	
771048PRP-N005	2	37.6	N/A	
771048PRP-N006	2	1.4	N/A	
771048PRP-N007	1	19.6	N/A	
771048PRP-N008	2	7.7	N/A	
771048PRP-N009	2	22.6	N/A	
771048PRP-N010	2	10.4	N/A	
771048PRP-N011	2	25.8	N/A	
771048PRP-N012	1	41.0	N/A	
771048PRP-N013	1	31.9	N/A	
771048PRP-N014	2	25.8	N/A	
771048PRP-N015	2	10.4	N/A	

Comments:

Survey Area: AM	Survey Unit: 771048	Building: 774

Description: Rooms 343 and Room 443 (Stairwell)

Media Samples Data Sheet

Site Sample ID / Nbr --- Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in^2)	Sample Nuclide ($dpm/100cm^2$)	Sample Nuclide MDA ($dpm/100cm^2$)	Sample Total ($dpm/100cm^2$)
03Z2110-001.001 1	U234	NA	NA	5.93	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1280	0.1760			1	1	**Transuranic**
	Am241	0.0706	0.1050			1	1	2
03Z2110-002.001 2	U234	NA	NA	24.72	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1120	0.1980			4	6	**Transuranic**
	Am241	0.0656	0.1350			2	4	6
03Z2110-003.001 3	U234	NA	NA	29.04	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	0.1890			0	7	**Transuranic**
	Am241	0.0437	0.0805			2	3	2
03Z2110-004.001 4	U234	NA	NA	27.89	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	0.2580			0	9	**Transuranic**
	Am241	0.0499	0.0214			2	1	2
03Z2110-005.001 5	U234	NA	NA	18.53	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.7470	0.1900			18	5	**Transuranic**
	Am241	2.3400	0.0847			57	2	75
03Z2110-006.001 6	U234	NA	NA	21.68	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0578	0.2140			2	6	**Transuranic**
	Am241	0.0384	0.1180			1	3	3
03Z2110-007.001 7	U234	NA	NA	18.88	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	0.2170			0	5	**Transuranic**
	Am241	0.0147	0.0470			0	1	0

Comments:

Survey Area: AM | **Survey Unit:** 771048 | **Building:** 774

Description: Rooms 343 and Room 443 (Stairwell)

Media Samples Data Sheet

Site Sample ID / Nbr Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in²)	Sample Nuclide (dpm/100cm²)	Sample Nuclide MDA (dpm/100cm²)	Sample Total (dpm/100cm²)
03Z2110-008.001 8	U234	NA	NA	10.18	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1990	0.2600			3	4	**Transuranic**
	Am241	0.1660	0.0723			2	1	5
03Z2110-009.001 9	U234	NA	NA	9.38	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0424	0.1730			1	2	**Transuranic**
	Am241	0.1160	0.0267			1	0	2
03Z2110-010.001 10	U234	NA	NA	5.06	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0612	0.1860			0	1	**Transuranic**
	Am241	0.3050	0.0712			2	1	2
03Z2110-011.001 11	U234	NA	NA	1.09	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0877	0.2630			0	0	**Transuranic**
	Am241	0.9330	0.0610			1	0	1
03Z2110-012.001 12	U234	NA	NA	1.20	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.4010	0.2000			1	0	**Transuranic**
	Am241	0.8920	0.0756			1	0	2
03Z2110-013.001 13	U234	NA	NA	1.04	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.3920	0.1480			1	0	**Transuranic**
	Am241	1.3400	0.0746			2	0	2
03Z2110-014.001 14	U234	NA	NA	28.50	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0168	0.2010			1	8	**Transuranic**
	Am241	0.0247	0.0787			1	3	2

Survey Area: AM	Survey Unit: 771048	Building: 774
Description: Rooms 343 and Room 443 (Stairwell)		

Media Samples Data Sheet

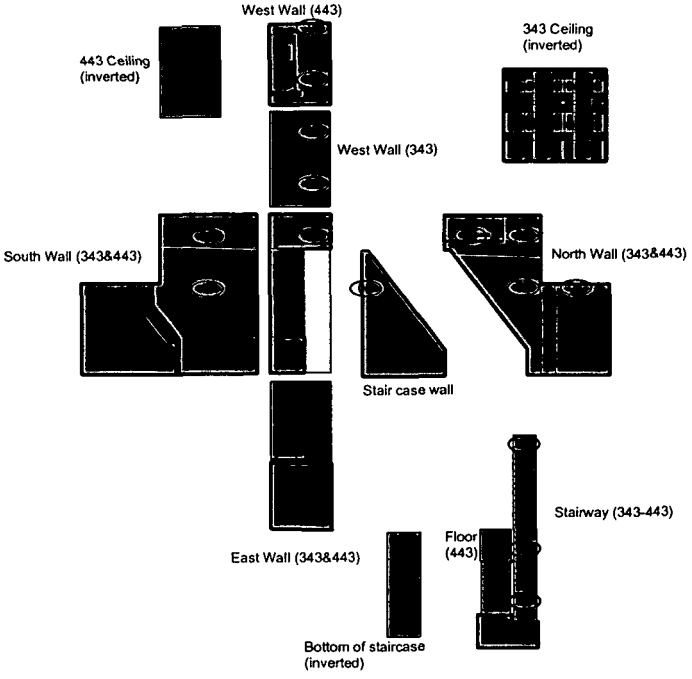
Site Sample ID / Nbr --- Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in^2)	Sample Nuclide ($dpm/100cm^2$)	Sample Nuclide MDA ($dpm/100cm^2$)	Sample Total ($dpm/100cm^2$)
03Z2110-015.001 15	U234	NA	NA	15.78	26.3	NA	NA	
Stairwell	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0205	0.1420			0	3	**Transuranic**
	Am241	0.0827	0.0226			2	1	2

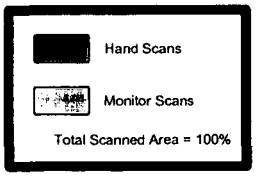
RADIOLOGICAL CLOSEOUT SURVEY FOR THE 771 CLUSTER

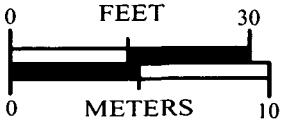
Survey Area: AM **Survey Unit: 771048** **Classification: 1**
Building: 774
Survey Unit Description: Room 343, 443

Total Floor Area: 19 sq. m **Total Area: 128 sq. m** **Grid Size: 2m x 2m**

SURVEY UNIT 771048 - MAP 1 OF 1







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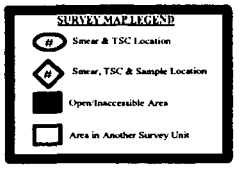


ATTACHMENT C

Survey Unit 771054
Radiological Data Summary and Survey Map

Survey Area: AM	Survey Unit: 771054	Building: 774
Description: Room 241 upper walls and ceiling (areas greater than 6 foot above final grade)		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Number Required: 42 Number Performed: 42 Number QC Performed: 2

Alpha - Random

Maximum:	97.8 dpm/100cm²
Minimum:	-7.6 dpm/100cm²
Mean:	20.1 dpm/100cm²
Standard Deviation:	22.2
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

* Biased TSA and QC measurements not included in above statistics.

Removable Surface Activity Measurements

Number Required: 42 Number Performed: 42

Alpha - Random

Maximum:	5.2 dpm/100cm²
Minimum:	-1.5 dpm/100cm²
Mean:	0.5 dpm/100cm²
Standard Deviation:	1.7
Transuranic DCGL$_W$:	20.0 dpm/100cm²

* Biased RSA measurements not included in above statistics.

Media Sample Results

Number Required: 0 Number Collected: 0

Uranium

Maximum:	NA dpm/100cm²
Minimum:	NA dpm/100cm²
Mean:	NA dpm/100cm²
Standard Deviation:	NA
Uranium DCGL$_W$:	5,000 dpm/100cm²
Uranium DCGL$_{EMC}$:	15,000 dpm/100cm²

Transuranic

Maximum:	NA dpm/100cm²
Minimum:	NA dpm/100cm²
Mean:	NA dpm/100cm²
Standard Deviation:	NA
Transuranic DCGL$_W$:	100 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300 dpm/100cm²

Survey Area: AM	Survey Unit: 771054	Building: 774

Description: Room 241 upper walls and ceiling (areas greater than 6 foot above final grade)

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	600586	03/28/04	Electra	392	DP-6	09/09/04	0.221	NA	48.0	NA	TSA
2	711798	03/28/04	Electra	2385	DP-6	06/03/04	0.219	NA	48.0	NA	TSA
3	600586	03/28/04	SAC-4	1185	NA	08/09/04	0.330	NA	10.0	NA	RSA
4	600586	03/28/04	SAC-4	1053	NA	07/22/04	0.330	NA	10.0	NA	RSA
5	600586	03/28/04	SAC-4	820	NA	08/18/04	0.330	NA	10.0	NA	RSA
6	600586	03/28/04	SAC-4	815	NA	08/09/04	0.330	NA	10.0	NA	RSA

Survey Area: AM	Survey Unit: 771054	Building: 774
Description: Room 241 upper walls and ceiling (areas greater than 6 foot above final grade)		

Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
771054PRP-N001	4	-0.9	N/A	
771054PRP-N002	6	1.8	N/A	
771054PRP-N003	3	-0.3	N/A	
771054PRP-N004	5	-0.0	N/A	
771054PRP-N005	5	-1.5	N/A	
771054PRP-N006	5	-1.5	N/A	
771054PRP-N007	3	4.2	N/A	
771054PRP-N008	3	2.7	N/A	
771054PRP-N009	6	1.8	N/A	
771054PRP-N010	4	2.1	N/A	
771054PRP-N011	5	-0.0	N/A	
771054PRP-N012	3	4.2	N/A	
771054PRP-N013	5	1.5	N/A	
771054PRP-N014	6	-1.2	N/A	
771054PRP-N015	5	3.0	N/A	
771054PRP-N016	4	-0.9	N/A	
771054PRP-N017	6	0.3	N/A	
771054PRP-N018	6	-1.2	N/A	
771054PRP-N019	5	-1.5	N/A	
771054PRP-N020	5	3.0	N/A	
771054PRP-N021	4	0.6	N/A	
771054PRP-N022	3	-0.3	N/A	
771054PRP-N023	3	-0.3	N/A	
771054PRP-N024	6	0.3	N/A	
771054PRP-N025	6	0.3	N/A	
771054PRP-N026	4	0.6	N/A	
771054PRP-N027	5	-0.0	N/A	
771054PRP-N028	3	-0.3	N/A	
771054PRP-N029	4	-0.9	N/A	

Survey Area: AM	Survey Unit: 771054	Building: 774

Description: Room 241 upper walls and ceiling (areas greater than 6 foot above final grade)

Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
771054PRP-N030	4	-0.9	N/A	
771054PRP-N031	6	-1.2	N/A	
771054PRP-N032	3	-0.3	N/A	
771054PRP-N033	4	0.6	N/A	
771054PRP-N034	5	-1.5	N/A	
771054PRP-N035	3	-0.3	N/A	
771054PRP-N036	6	1.8	N/A	
771054PRP-N037	5	-1.5	N/A	
771054PRP-N038	5	-0.0	N/A	
771054PRP-N039	3	1.2	N/A	
771054PRP-N040	4	5.2	N/A	
771054PRP-N041	6	1.8	N/A	
771054PRP-N042	6	1.8	N/A	

Comments:

Survey Area: AM	Survey Unit: 771054	Building: 774

Description: Room 241 upper walls and ceiling (areas greater than 6 foot above final grade)

Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
771054PRP-N001	1	7.3	N/A	
771054QRP-N001	2	51.6	N/A	
771054PRP-N002	1	4.1	N/A	
771054QRP-N002	2	15.1	N/A	
771054PRP-N003	1	-7.6	N/A	
771054PRP-N004	1	34.4	N/A	
771054PRP-N005	1	1.4	N/A	
771054PRP-N006	1	19.5	N/A	
771054PRP-N007	1	40.3	N/A	
771054PRP-N008	1	-7.6	N/A	
771054PRP-N009	1	7.3	N/A	
771054PRP-N010	1	10.5	N/A	
771054PRP-N011	2	20.0	N/A	
771054PRP-N012	2	38.3	N/A	
771054PRP-N013	2	-4.6	N/A	
771054PRP-N014	2	35.1	N/A	
771054PRP-N015	2	16.8	N/A	
771054PRP-N016	2	4.5	N/A	
771054PRP-N017	2	20.0	N/A	
771054PRP-N018	2	20.0	N/A	
771054PRP-N019	2	4.5	N/A	
771054PRP-N020	1	13.2	N/A	
771054PRP-N021	1	97.8	N/A	
771054PRP-N022	1	70.6	N/A	
771054PRP-N023	1	16.3	N/A	
771054PRP-N024	1	10.5	N/A	
771054PRP-N025	1	19.5	N/A	

Survey Area: AM	Survey Unit: 771054	Building: 774

Description: *Room 241 upper walls and ceiling (areas greater than 6 foot above final grade)*

Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
771054PRP-N026	1	4.1	N/A	
771054PRP-N027	1	13.2	N/A	
771054PRP-N028	2	41.0	N/A	
771054PRP-N029	2	38.3	N/A	
771054PRP-N030	2	-4.6	N/A	
771054PRP-N031	2	41.0	N/A	
771054PRP-N032	2	4.5	N/A	
771054PRP-N033	2	74.8	N/A	
771054PRP-N034	1	25.4	N/A	
771054PRP-N035	1	4.1	N/A	
771054PRP-N036	1	10.5	N/A	
771054PRP-N037	1	4.1	N/A	
771054PRP-N038	1	34.4	N/A	
771054PRP-N039	1	4.1	N/A	
771054PRP-N040	1	7.3	N/A	
771054PRP-N041	1	25.4	N/A	
771054PRP-N042	1	22.2	N/A	

Comments:

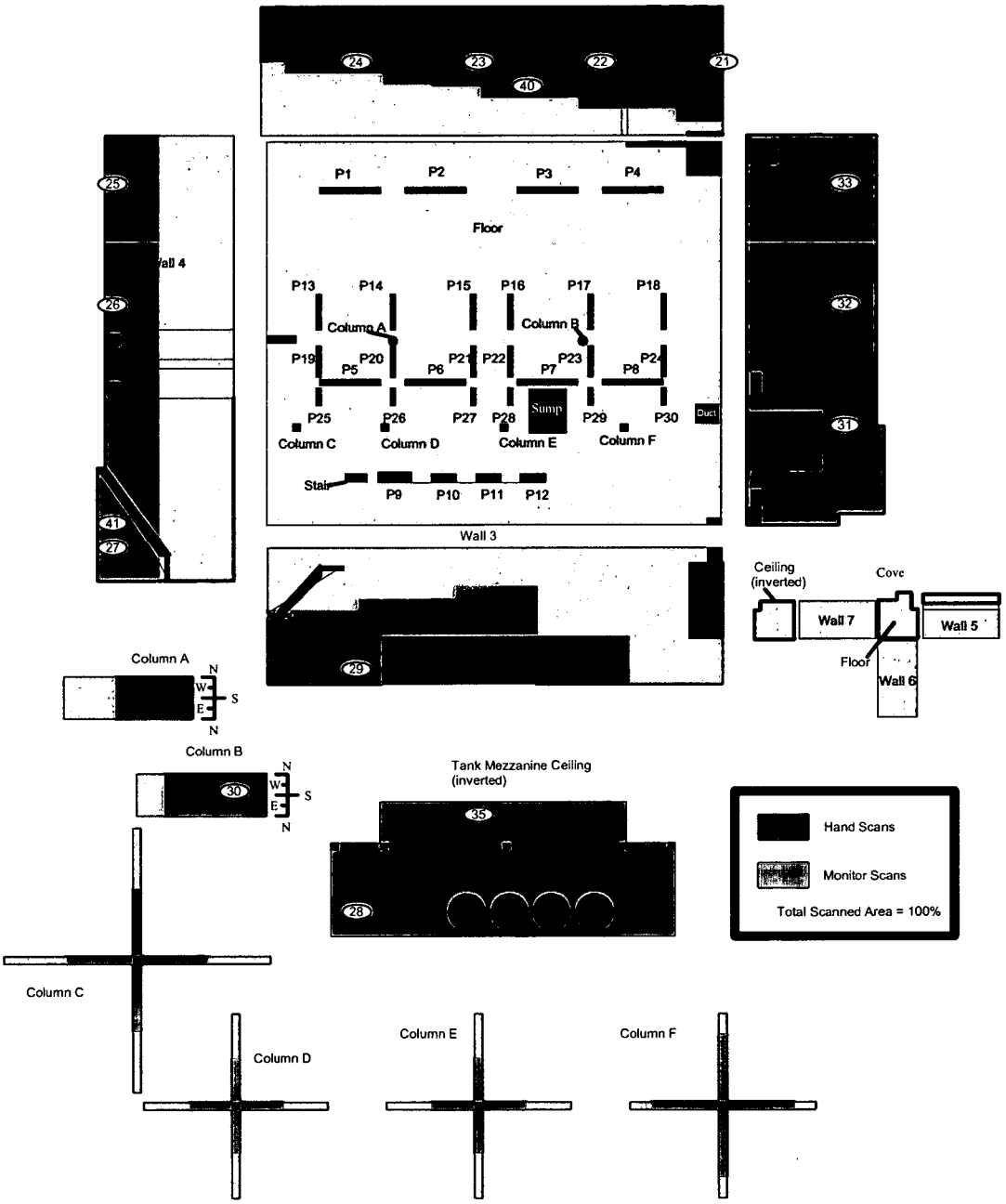
RADIOLOGICAL CLOSEOUT SURVEY FOR THE 771 CLUSTER

Survey Area: AM **Survey Unit: 771054** **Classification: 1**
Building: 774
Survey Unit Description: Room 241

Total Floor Area: 278 sq. m **Total Area: 1112 sq. m** **Grid Size: 5m x 5m**

SURVEY UNIT 771054 - MAP 1 OF 2

Room 241



0 FEET 30

0 METERS 10

N

SURVEY MAP LEGEND
- Smear & TSC Location
- Smear, TSC & Sample Location
- Open/Inaccessible Area
- Excluded from survey

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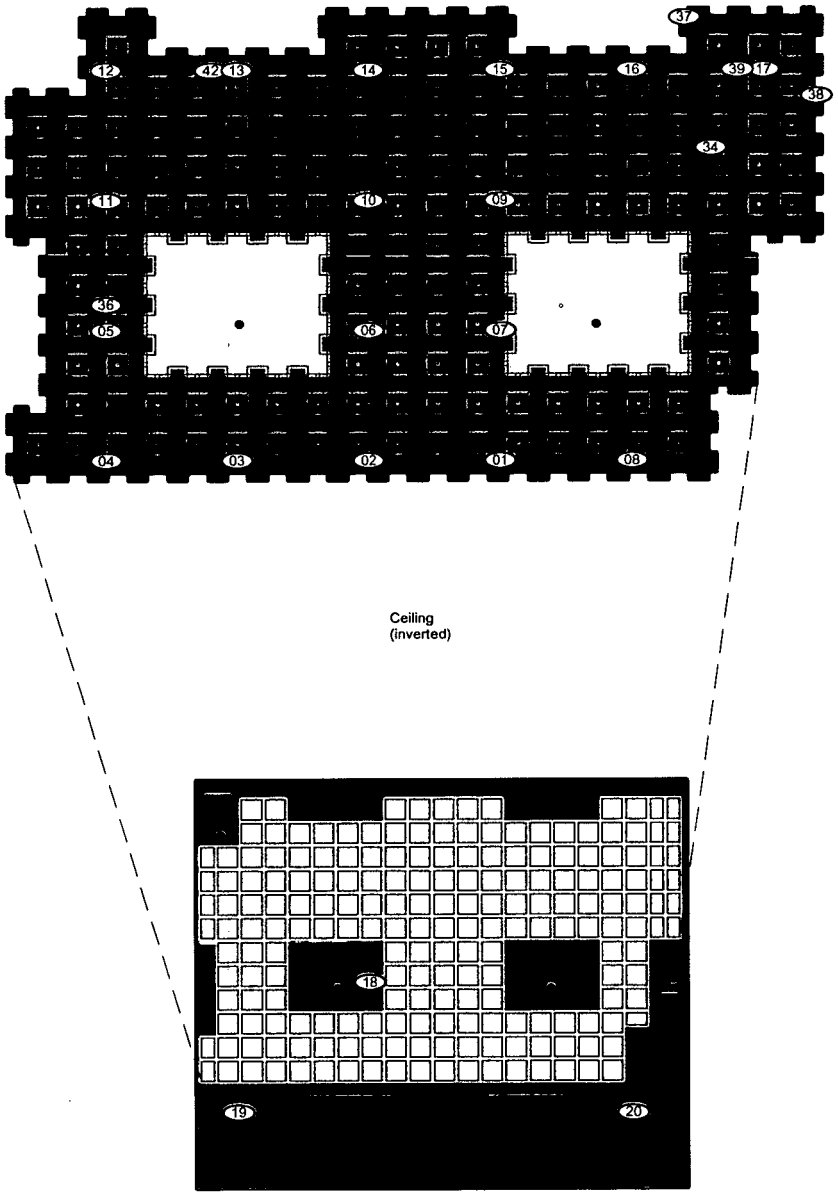
RADIOLOGICAL CLOSEOUT SURVEY FOR THE 771 CLUSTER

Survey Area: AM **Survey Unit: 771054** **Classification: 1**
Building: 774
Survey Unit Description: Room 241

Total Floor Area: 278 sq. m **Total Area: 1182 sq. m** **Grid Size: 5m x 5m**

SURVEY UNIT 771054 - MAP 2 OF 2



Hand Scans

Monitor Scans

Total Scanned Area = 100%

0 FEET 30

0 METERS 10

N

SURVEY MAP LEGEND

- Smear & TSC Location
- Smear, TSC & Sample Location
- Open/Inaccessible Area
- Area in another location

ATTACHMENT D

Survey Unit 771056
Radiological Data Summary and Survey Map

Survey Area: AM	Survey Unit: 771056	Building: 774
Description:		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Number Required: 15 Number Performed: 15 Number QC Performed: 2

Alpha - Random

Maximum:	27.4 dpm/100cm²
Minimum:	-14.2 dpm/100cm²
Mean:	8.6 dpm/100cm²
Standard Deviation:	10.9
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

* Biased TSA and QC measurements not included in above statistics.

Removable Surface Activity Measurements

Number Required: 15 Number Performed: 15

Alpha - Random

Maximum:	2.1 dpm/100cm²
Minimum:	-1.8 dpm/100cm²
Mean:	-0.4 dpm/100cm²
Standard Deviation:	1.2
Transuranic DCGL$_W$:	20.0 dpm/100cm²

* Biased RSA measurements not included in above statistics.

Media Sample Results

Number Required: 15 Number Collected: 15

Uranium

Maximum:	NA dpm/100cm²
Minimum:	NA dpm/100cm²
Mean:	NA dpm/100cm²
Standard Deviation:	NA
Uranium DCGL$_W$:	5,000 dpm/100cm²
Uranium DCGL$_{EMC}$:	15,000 dpm/100cm²

Transuranic

Maximum:	33 dpm/100cm²
Minimum:	0 dpm/100cm²
Mean:	5 dpm/100cm²
Standard Deviation:	8
Transuranic DCGL$_W$:	100 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300 dpm/100cm²

Survey Area: AM	Survey Unit: 771056	Building: 774
Description:		

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
4	711451	03/20/04	SAC-4	1053	NA	07/22/04	0.330	NA	10.0	NA	RSA
5	711451	03/20/04	SAC-4	820	NA	08/18/04	0.330	NA	10.0	NA	RSA
6	711451	03/20/04	SAC-4	1185	NA	08/09/04	0.330	NA	10.0	NA	RSA
7	711451	03/20/04	Electra	2380	DP-6	08/18/04	0.210	NA	48.0	NA	TSA
8	711449	03/20/04	Electra	2372	DP-6	09/01/04	0.218	NA	48.0	NA	TSA

Survey Area: AM	Survey Unit: 771056	Building: 774

Description:

Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
771056PRP-N001	4	-0.9	N/A	
771056PRP-N002	5	-0.3	N/A	
771056PRP-N003	6	-1.8	N/A	
771056PRP-N004	4	-0.9	N/A	
771056PRP-N005	5	-0.3	N/A	
771056PRP-N006	6	1.2	N/A	
771056PRP-N007	4	0.6	N/A	
771056PRP-N008	5	-1.8	N/A	
771056PRP-N009	6	-0.3	N/A	
771056PRP-N010	4	2.1	N/A	
771056PRP-N011	5	-0.3	N/A	
771056PRP-N012	6	-1.8	N/A	
771056PRP-N013	4	0.6	N/A	
771056PRP-N014	5	-0.3	N/A	
771056PRP-N015	6	-1.8	N/A	

Comments:

Survey Area: AM	Survey Unit: 771056	Building: 774

Description:

Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
771056PRP-N001	7	21.2	N/A	
771056QRP-N001	7	12.9	N/A	
771056PRP-N002	7	8.4	N/A	
771056QRP-N002	8	14.8	N/A	
771056PRP-N003	7	2.2	N/A	
771056PRP-N004	7	5.0	N/A	
771056PRP-N005	7	-4.5	N/A	
771056PRP-N006	7	8.4	N/A	
771056PRP-N007	7	24.1	N/A	
771056PRP-N008	7	27.4	N/A	
771056PRP-N009	7	2.2	N/A	
771056PRP-N010	8	10.5	N/A	
771056PRP-N011	7	5.0	N/A	
771056PRP-N012	8	-14.2	N/A	
771056PRP-N013	7	11.7	N/A	
771056PRP-N014	8	4.1	N/A	
771056PRP-N015	7	17.9	N/A	

Comments:

Survey Area: AM | **Survey Unit:** 771056 | **Building:** 774

Description:

Media Samples Data Sheet

Site Sample ID / Nbr Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in²)	Sample Nuclide (dpm/100cm²)	Sample Nuclide MDA (dpm/100cm²)	Sample Total (dpm/100cm²)
01N0008-001.001 1 Room 341	U234	NA	NA	1.85	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0570	0.0770			0	0	**Transuranic**
	Am241	0.0310	0.0850			0	0	0
01N0008-002.001 2 Room 341	U234	NA	NA	6.57	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1080	0.1460			1	1	**Transuranic**
	Am241	0.0590	0.0800			1	1	1
01N0008-003.001 3 Room 341	U234	NA	NA	4.29	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	0.1230			0	1	**Transuranic**
	Am241	0.1080	0.1440			1	1	1
01N0008-004.001 4 Room 341	U234	NA	NA	2.63	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0780	0.1750			0	1	**Transuranic**
	Am241	0.1060	0.1410			0	1	1
01N0008-005.001 5 Room 341	U234	NA	NA	13.79	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1870	0.1470			3	3	**Transuranic**
	Am241	0.3250	0.0800			6	1	9
01N0008-006.001 6 Room 341	U234	NA	NA	7.85	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.2210	0.1230			2	1	**Transuranic**
	Am241	0.5970	0.2120			6	2	8
01N0008-007.001 7 Room 341	U234	NA	NA	3.84	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.3180	0.1570			2	1	**Transuranic**
	Am241	6.2800	0.0810			32	0	33

Comments:

Survey Area: AM	Survey Unit: 771056	Building: 774
Description:		

Media Samples Data Sheet

Site Sample ID / Nbr --- Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in^2)	Sample Nuclide ($dpm/100cm^2$)	Sample Nuclide MDA ($dpm/100cm^2$)	Sample Total ($dpm/100cm^2$)
01N0008-008.001 8	U234	NA	NA	1.20	26.3	NA	NA	
Room 341	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1130	0.1530			0	0	**Transuranic**
	Am241	0.6040	0.0860			1	0	1
01N0008-009.001 9	U234	NA	NA	16.33	26.3	NA	NA	
Room 341	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0140	0.1130			0	2	**Transuranic**
	Am241	0.0680	0.0920			2	2	2
01N0008-010.001 10	U234	NA	NA	11.93	26.3	NA	NA	
Room 341	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	0.1730			0	3	**Transuranic**
	Am241	0.0500	0.1500			1	2	1
01N0008-011.001 11	U234	NA	NA	8.09	26.3	NA	NA	
Room 341	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0160	0.1240			0	1	**Transuranic**
	Am241	0.0970	0.1790			1	2	1
01N0008-012.001 12	U234	NA	NA	11.16	26.3	NA	NA	
Room 341	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1280	0.1680			2	3	**Transuranic**
	Am241	0.3940	0.1620			6	2	8
01N0008-013.001 13	U234	NA	NA	5.18	26.3	NA	NA	
Room 341	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1720	0.1570			1	1	**Transuranic**
	Am241	0.4660	0.0970			3	1	4
01N0008-014.001 14	U234	NA	NA	3.06	26.3	NA	NA	
Room 341	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0270	0.0720			0	0	**Transuranic**
	Am241	0.4060	0.2380			2	1	2

Survey Area: AM	Survey Unit: 771056	Building: 774

Description:

Media Samples Data Sheet

Site Sample ID / Nbr Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in^2)	Sample Nuclide ($dpm/100cm^2$)	Sample Nuclide MDA ($dpm/100cm^2$)	Sample Total ($dpm/100cm^2$)
01N0008-015.001 15	U234	NA	NA	2.70	26.3	NA	NA	
Room 341	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1060	0.1760			0	1	**Transuranic**
	Am241	0.4890	0.0830			2	0	2

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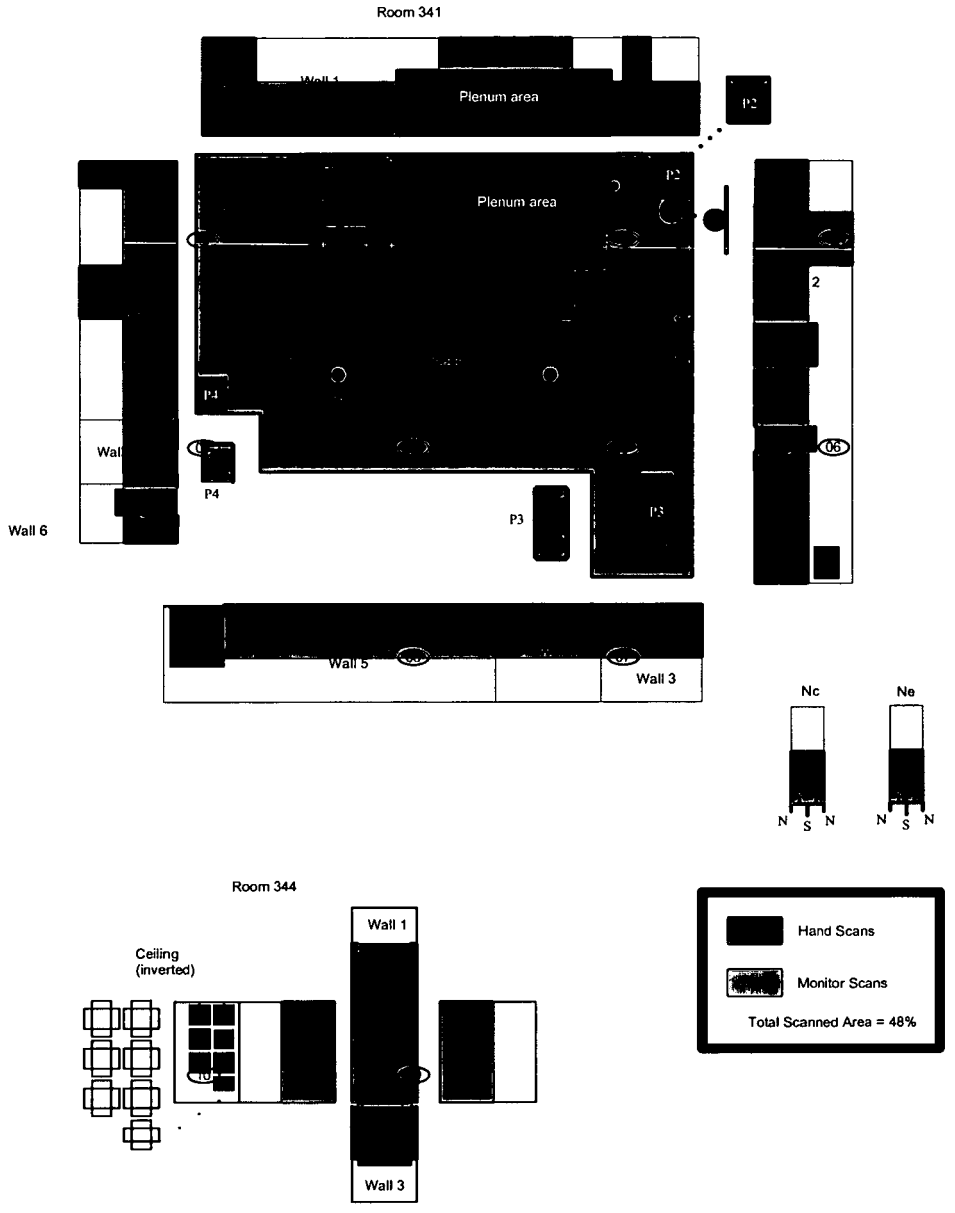
RADIOLOGICAL CLOSEOUT SURVEY FOR THE 771 CLUSTER

Survey Area: AM **Survey Unit: 771056** **Classification: 2**
Building: 774
Survey Unit Description: Room 341, 344

Total Floor Area: 194 sq. m **Total Area: 1034 sq. m** **Grid Size: 8m x 8m**

SURVEY UNIT 771056 - MAP 1 OF 2



0 FEET 30
0 METERS 10

N

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SURVEY MAP LEGEND
Smear & TSC Location
Smear, TSC & Sample Location
Open/Inaccessible Area
Area in Another Survey Unit

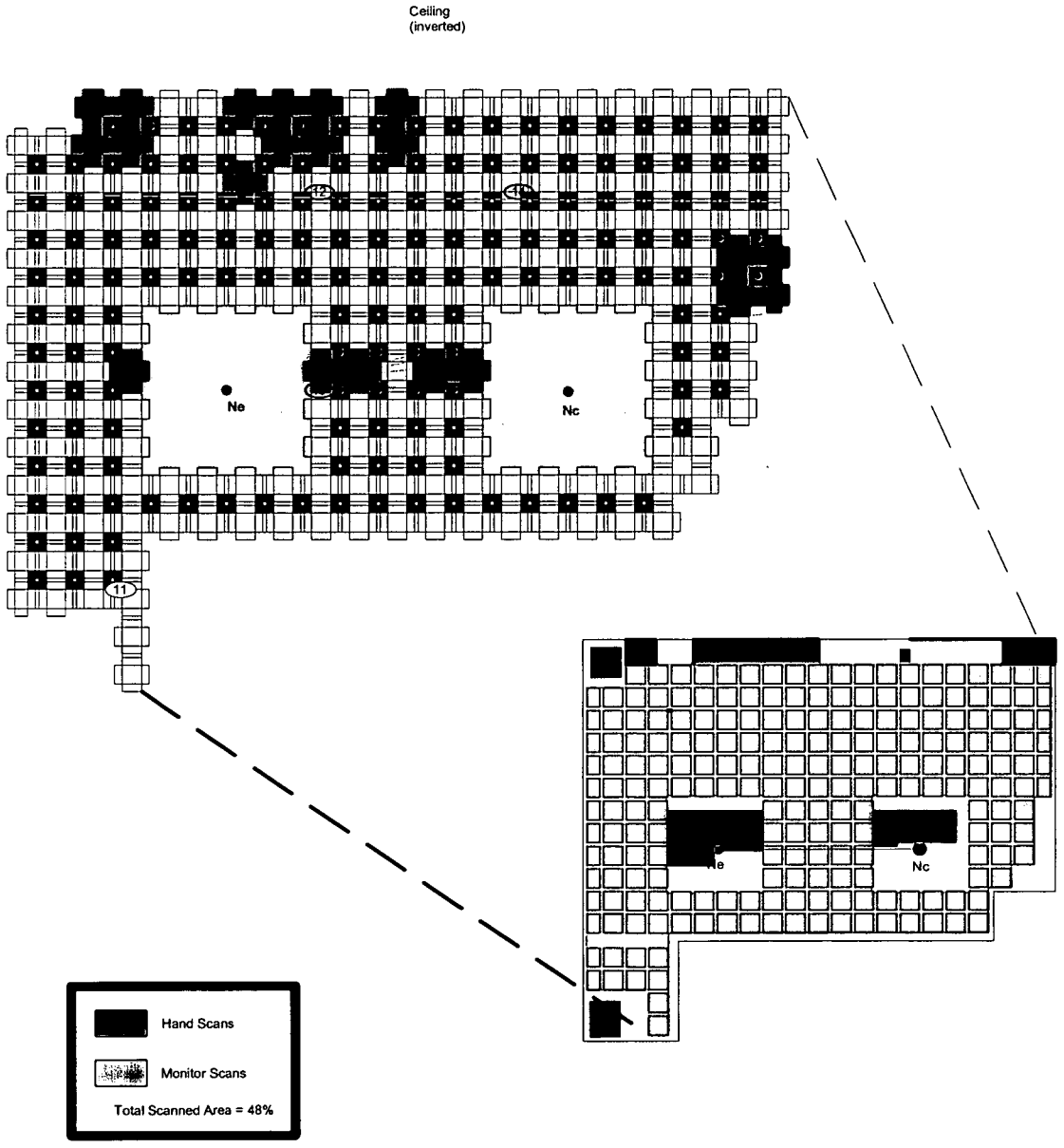
RADIOLOGICAL CLOSEOUT SURVEY FOR THE 771 CLUSTER

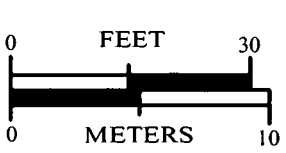
Survey Area: AM **Survey Unit: 771056** **Classification: 2**
Building: 774
Survey Unit Description: Room 341, 342

Total Floor Area: 194 sq. m **Total Area: 1034 sq. m** **Grid Size: 8m x 8m**

SURVEY UNIT 771056 - MAP 2 OF 2

Room 341





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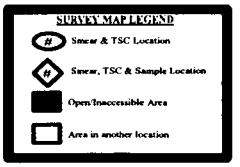


ATTACHMENT E

Survey Unit 771057
Radiological Data Summary and Survey Map

Survey Area: AM	Survey Unit: 771057	Building: 774
Description: Room 441 and 442.		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Number Required: 15 Number Performed: 15 Number QC Performed: 2

Alpha - Random

Maximum:	22.1 dpm/100cm²
Minimum:	-11.2 dpm/100cm²
Mean:	8.7 dpm/100cm²
Standard Deviation:	10.2
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

* Biased TSA and QC measurements not included in above statistics.

Removable Surface Activity Measurements

Number Required: 15 Number Performed: 15

Alpha - Random

Maximum:	3.6 dpm/100cm²
Minimum:	-1.5 dpm/100cm²
Mean:	0.0 dpm/100cm²
Standard Deviation:	1.5
Transuranic DCGL$_W$:	20.0 dpm/100cm²

* Biased RSA measurements not included in above statistics.

Media Sample Results

Number Required: 17 Number Collected: 17

Uranium

Maximum:	NA dpm/100cm²
Minimum:	NA dpm/100cm²
Mean:	NA dpm/100cm²
Standard Deviation:	NA
Uranium DCGL$_W$:	5,000 dpm/100cm²
Uranium DCGL$_{EMC}$:	15,000 dpm/100cm²

Transuranic

Maximum:	17 dpm/100cm²
Minimum:	0 dpm/100cm²
Mean:	7 dpm/100cm²
Standard Deviation:	5
Transuranic DCGL$_W$:	100 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300 dpm/100cm²

Survey Area: AM	Survey Unit: 771057	Building: 774
Description: Room 441 and 442.		

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
8	513699	03/19/04	Electra	2372	DP-6	09/01/04	0.218	NA	48.0	NA	TSA
9	711451	03/19/04	Electra	296	DP-6	07/29/04	0.209	NA	48.0	NA	TSA
10	515878	03/19/04	SAC-4	1053	NA	07/22/04	0.330	NA	10.0	NA	RSA
11	515878	03/19/04	SAC-4	820	NA	08/18/04	0.330	NA	10.0	NA	RSA
12	515878	03/19/04	SAC-4	815	NA	08/09/04	0.330	NA	10.0	NA	RSA
88	513699	03/19/04	Electra	2372	DP-6	09/01/04	0.218	NA	48.0	NA	TSA
99	711451	03/19/04	Electra	296	DP-6	07/29/04	0.209	NA	48.0	NA	TSA

Survey Area: AM	Survey Unit: 771057	Building: 774
Description: Room 441 and 442.		

Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
771057PRP-N001	10	2.1	N/A	
771057PRP-N002	12	0.3	N/A	
771057PRP-N003	10	3.6	N/A	
771057PRP-N004	11	-1.5	N/A	
771057PRP-N005	12	0.3	N/A	
771057PRP-N006	10	-0.9	N/A	
771057PRP-N007	11	-0.0	N/A	
771057PRP-N008	12	-1.2	N/A	
771057PRP-N009	10	-0.9	N/A	
771057PRP-N010	11	-1.5	N/A	
771057PRP-N011	12	-1.2	N/A	
771057PRP-N012	11	-0.0	N/A	
771057PRP-N013	10	2.1	N/A	
771057PRP-N014	11	-0.0	N/A	
771057PRP-N015	12	-1.2	N/A	

Comments:

Survey Area: AM	Survey Unit: 771057	Building: 774

Description: Room 441 and 442.

Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
771057PRP-N001	8	18.9	N/A	
771057PRP-N002	8	22.1	N/A	
771057PRP-N003	8	-2.7	N/A	
771057PRP-N004	8	15.7	N/A	
771057PRP-N005	8	3.8	N/A	
771057QRP-N005	9	11.7	N/A	
771057PRP-N006	8	12.9	N/A	
771057PRP-N007	9	5.1	N/A	
771057PRP-N008	9	-7.8	N/A	
771057PRP-N009	9	20.9	N/A	
771057QRP-N010	8	-2.3	N/A	
771057PRP-N010	9	-11.2	N/A	
771057PRP-N011	9	14.7	N/A	
771057PRP-N012	8	9.7	N/A	
771057PRP-N013	9	14.7	N/A	
771057PRP-N014	9	11.3	N/A	
771057PRP-N015	9	1.7	N/A	

Comments:

Survey Area: AM	Survey Unit: 771057	Building: 774

Description: Room 441 and 442.

Media Samples Data Sheet

Site Sample ID / Nbr --- Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in²)	Sample Nuclide (dpm/100cm²)	Sample Nuclide MDA (dpm/100cm²)	Sample Total (dpm/100cm²)
01N0009-001.001 1 441	U234	NA	NA	25.35	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0580	0.1490			2	5	**Transuranic**
	Am241	0.1730	0.0780			6	3	8
01N0009-002.001 2 441	U234	NA	NA	7.89	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1510	0.1640			2	2	**Transuranic**
	Am241	0.3460	0.1560			4	2	5
01N0009-003.001 3 441	U234	NA	NA	4.14	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0230	0.1850			0	1	**Transuranic**
	Am241	0.1250	0.0850			1	1	1
01N0009-004.001 4 441	U234	NA	NA	2.35	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	1.0300	0.0930			3	0	**Transuranic**
	Am241	2.3800	0.2350			7	1	11
01N0009-005.001 5 441	U234	NA	NA	7.40	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1320	0.1430			1	1	**Transuranic**
	Am241	0.4160	0.0700			4	1	5
01N0009-006.001 6 441	U234	NA	NA	3.62	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0460	0.1360			0	1	**Transuranic**
	Am241	0.2520	0.0850			1	0	1
01N0009-007.001 7 441	U234	NA	NA	2.46	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	1.0800	0.0730			4	0	**Transuranic**
	Am241	4.3100	0.0940			14	0	17

Comments:

Survey Area: AM | **Survey Unit:** 771057 | **Building:** 774

Description: Room 441 and 442

Media Samples Data Sheet

Site Sample ID / Nbr --- Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in^2)	Sample Nuclide ($dpm/100cm^2$)	Sample Nuclide MDA ($dpm/100cm^2$)	Sample Total ($dpm/100cm^2$)
01N0009-008.001 8 441	U234	NA	NA	1.81	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.9650	0.0670			2	0	**Transuranic**
	Am241	3.4400	0.1540			8	0	10
01N0009-009.001 9 441	U234	NA	NA	6.53	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1350	0.0730			1	1	**Transuranic**
	Am241	1.0800	0.0810			9	1	10
01N0009-010.001 10 441	U234	NA	NA	7.61	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0300	0.1410			0	1	**Transuranic**
	Am241	0.0000	0.0950			0	1	0
01N0009-011.001 11 441	U234	NA	NA	33.72	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	0.1790			0	8	**Transuranic**
	Am241	0.0760	0.1410			3	6	3
01N0009-012.001 12 441	U234	NA	NA	15.87	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0820	0.1440			2	3	**Transuranic**
	Am241	0.3120	0.1560			7	3	8
01N0009-013.001 13 441	U234	NA	NA	25.26	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0100	0.1780			0	6	**Transuranic**
	Am241	0.3320	0.0900			11	3	11
01N0009-014.001 14 441	U234	NA	NA	2.91	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1760	0.0790			1	0	**Transuranic**
	Am241	0.1380	0.0750			1	0	1

Survey Area: AM	Survey Unit: 771057	Building: 774
Description: Room 441 and 442.		

Media Samples Data Sheet

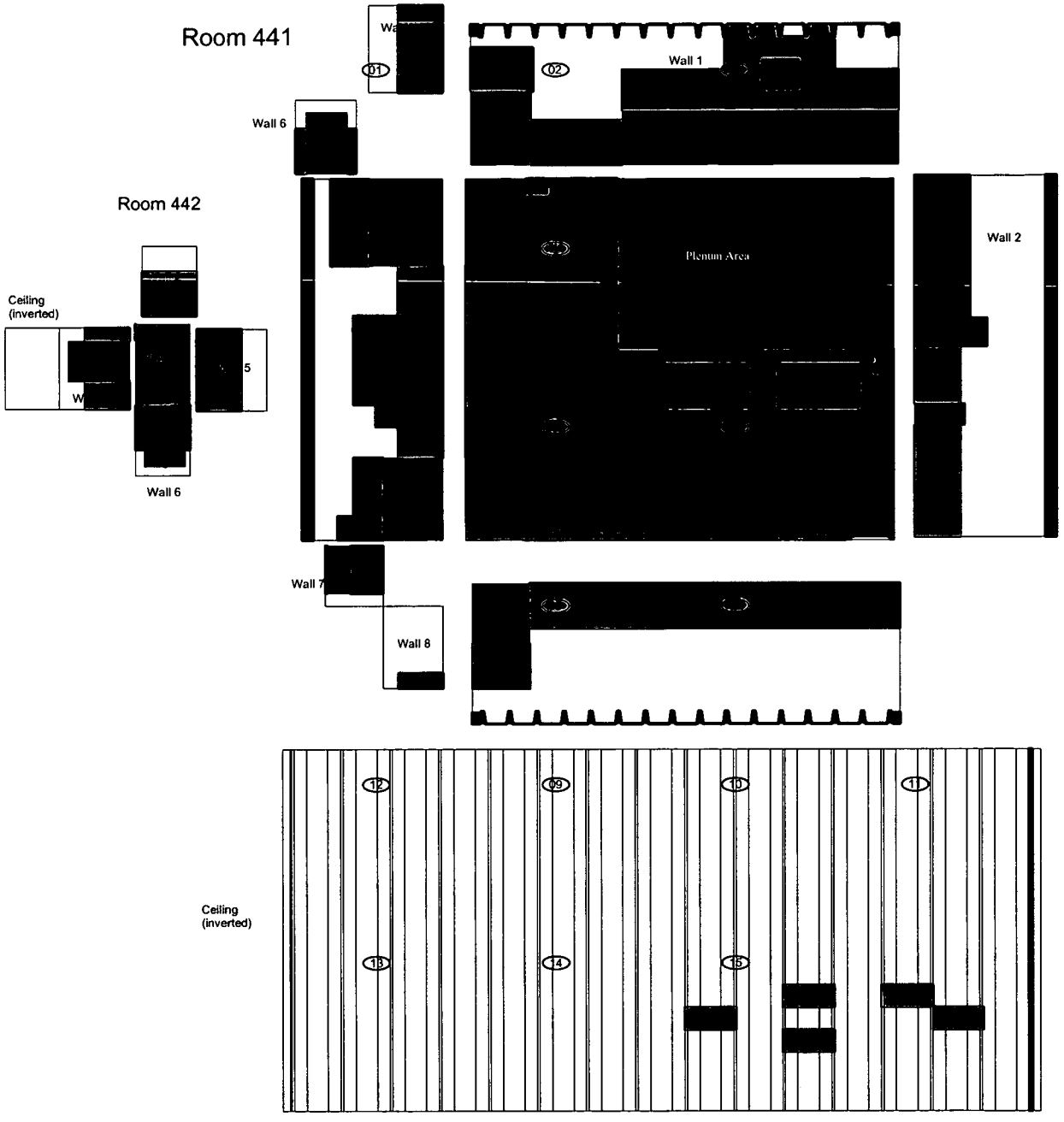
Site Sample ID / Nbr Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in^2)	Sample Nuclide ($dpm/100cm^2$)	Sample Nuclide MDA ($dpm/100cm^2$)	Sample Total ($dpm/100cm^2$)
01N0009-015.001 15	U234	NA	NA	11.25	26.3	NA	NA	
441	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1050	0.1400			2	2	**Transuranic**
	Am241	0.4730	0.0850			7	1	9
01N0009-016.001 16	U234	NA	NA	6.13	26.3	NA	NA	
441	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.2050	0.1490			2	1	**Transuranic**
	Am241	0.3340	0.1010			3	1	4
01N0009-017.001 17	U234	NA	NA	11.61	26.3	NA	NA	
441	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.3290	0.0690			5	1	**Transuranic**
	Am241	0.5460	0.1410			8	2	13

RADIOLOGICAL CLOSEOUT SURVEY FOR THE 771 CLUSTER

Survey Area: AM **Survey Unit: 771057** **Classification: 2**
Building: 774
Survey Unit Description: 774 Room 441, 443

Total Floor Area: 186 sq. m **Total Area: 1169 sq. m** **Grid Size: 8m x 8m**

SURVEY UNIT 771057 - MAP 1 OF 1



ATTACHMENT F

Survey Unit 771058
Radiological Data Summary and Survey Map

Survey Area: AM	Survey Unit: 771058	Building: 774
Description: Room 342		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Number Required: 15 Number Performed: 15 Number QC Performed: 2

Alpha - Random

Maximum:	85.6 dpm/100cm²
Minimum:	-28.9 dpm/100cm²
Mean:	14.4 dpm/100cm²
Standard Deviation:	25.0
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

* Biased TSA and QC measurements not included in above statistics.

Removable Surface Activity Measurements

Number Required: 15 Number Performed: 15

Alpha - Random

Maximum:	4.3 dpm/100cm²
Minimum:	-1.5 dpm/100cm²
Mean:	0.8 dpm/100cm²
Standard Deviation:	1.7
Transuranic DCGL$_W$:	20.0 dpm/100cm²

* Biased RSA measurements not included in above statistics.

Media Sample Results

Number Required: 15 Number Collected: 15

Uranium

Maximum:	NA dpm/100cm²
Minimum:	NA dpm/100cm²
Mean:	NA dpm/100cm²
Standard Deviation:	NA
Uranium DCGL$_W$:	5,000 dpm/100cm²
Uranium DCGL$_{EMC}$:	15,000 dpm/100cm²

Transuranic

Maximum:	12 dpm/100cm²
Minimum:	0 dpm/100cm²
Mean:	5 dpm/100cm²
Standard Deviation:	4
Transuranic DCGL$_W$:	100 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300 dpm/100cm²

Survey Area: AM	Survey Unit: 771058	Building: 774
Description: Room 342		

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	600586	03/28/04	Electra	392	DP-6	09/09/04	0.221	NA	48.0	NA	TSA
2	600586	03/28/04	Electra	2382	DP-6	07/09/04	0.220	NA	48.0	NA	TSA
3	711798	03/28/04	Electra	2385	DP-6	06/03/04	0.219	NA	48.0	NA	TSA
4	600586	03/28/04	SAC-4	1185	NA	08/09/04	0.330	NA	10.0	NA	RSA
5	600586	03/28/04	SAC-4	1053	NA	07/22/04	0.330	NA	10.0	NA	RSA
6	600586	03/28/04	SAC-4	820	NA	08/18/04	0.330	NA	10.0	NA	RSA
7	600586	03/28/04	SAC-4	815	NA	08/09/04	0.330	NA	10.0	NA	RSA
15	516572	04/07/04	Electra	394	DP-6	06/26/04	0.226	NA	48.0	NA	TSA
16	516572	04/07/04	SAC-4	820	NA	08/18/04	0.330	NA	10.0	NA	RSA

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Survey Area: AM	Survey Unit: 771058	Building: 774
Description: Room 342		

Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
771058PRP-N001	4	-0.3	N/A	
771058PRP-N002	4	4.2	N/A	
771058PRP-N003	16	-0.3	N/A	
771058PRP-N004	6	-1.5	N/A	
771058PRP-N005	6	-0.0	N/A	
771058PRP-N006	7	1.8	N/A	
771058PRP-N007	4	1.2	N/A	
771058PRP-N008	5	2.1	N/A	
771058PRP-N009	7	1.8	N/A	
771058PRP-N010	5	2.1	N/A	
771058PRP-N011	5	0.6	N/A	
771058PRP-N012	6	-0.0	N/A	
771058PRP-N013	5	-0.9	N/A	
771058PRP-N014	6	-1.5	N/A	
771058PRP-N015	4	2.7	N/A	

Comments:

Survey Area: AM	Survey Unit: 771058	Building: 774
Description: Room 342		

Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
771058PRP-N001	1	13.2	N/A	
771058QRP-N001	3	-4.8	N/A	
771058PRP-N002	1	-1.8	N/A	
771058QRP-N002	3	-4.8	N/A	
771058PRP-N003	15	15.1	N/A	
771058PRP-N004	1	85.5	N/A	
771058PRP-N005	1	31.3	N/A	
771058PRP-N006	1	-4.9	N/A	
771058PRP-N007	1	1.4	N/A	
771058PRP-N008	2	-28.9	N/A	
771058PRP-N009	1	1.4	N/A	
771058PRP-N010	1	13.2	N/A	
771058PRP-N011	1	4.1	N/A	
771058PRP-N012	1	22.2	N/A	
771058PRP-N013	1	13.2	N/A	
771058PRP-N014	1	16.3	N/A	
771058PRP-N015	1	34.4	N/A	

Comments:

Survey Area: AM	Survey Unit: 771058	Building: 774
Description: Room 342		

Media Samples Data Sheet

Site Sample ID / Nbr / Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in²)	Sample Nuclide (dpm/100cm²)	Sample Nuclide MDA (dpm/100cm²)	Sample Total (dpm/100cm²)
01N0023-001.001 1	U234	NA	NA	10.28	26.3	NA	NA	
West Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0040	0.0330			0	0	**Transuranic**
	Am241	0.5350	0.1540			7	2	7
01N0023-002.001 2	U234	NA	NA	7.09	26.3	NA	NA	
West Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	-0.0050	0.1670			0	2	**Transuranic**
	Am241	0.0920	0.0830			1	1	1
01N0023-003.001 3	U234	NA	NA	3.35	26.3	NA	NA	
West Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	-0.0330	0.1760			0	1	**Transuranic**
	Am241	0.1830	0.0820			1	0	1
04Z0383-001.001 4	U234	NA	NA	7.81	26.3	NA	NA	
South Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0850	0.1160			1	1	**Transuranic**
	Am241	0.2430	0.2080			3	2	3
04Z0383-002.001 5	U234	NA	NA	5.19	26.3	NA	NA	
North Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.5200	0.2820			4	2	**Transuranic**
	Am241	0.1750	0.1190			1	1	5
04Z0383-003.001 6	U234	NA	NA	17.90	26.3	NA	NA	
North Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	0.3130			0	7	**Transuranic**
	Am241	0.3310	0.1120			8	3	8
01N0023-007.001 7	U234	NA	NA	8.15	26.3	NA	NA	
East Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.3720	0.0840			4	1	**Transuranic**
	Am241	0.3830	0.1580			4	2	8

Comments: Samples 4, 5, and 6 replace samples originally taken for RLC on the floor that were above the DCGLw. The media on the floor and lower walls will be removed.

Survey Area: AM	Survey Unit: 771058	Building: 774
Description: Room 342		

Media Samples Data Sheet

Site Sample ID / Nbr Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in^2)	Sample Nuclide ($dpm/100cm^2$)	Sample Nuclide MDA ($dpm/100cm^2$)	Sample Total ($dpm/100cm^2$)
01N0023-008.001 8	U234	NA	NA	7.70	26.3	NA	NA	
East Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.9490	0.0950			10	1	**Transuranic**
	Am241	0.2580	0.0780			3	1	12
01N0023-009.001 9	U234	NA	NA	7.56	26.3	NA	NA	
East Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.4960	0.0840			5	1	**Transuranic**
	Am241	0.4090	0.2190			4	2	9
01N0023-010.001 10	U234	NA	NA	6.32	26.3	NA	NA	
East Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0320	0.0860			0	1	**Transuranic**
	Am241	0.1530	0.0830			1	1	2
01N0023-011.001 11	U234	NA	NA	8.85	26.3	NA	NA	
East Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.2410	0.1730			3	2	**Transuranic**
	Am241	0.1240	0.1650			1	2	4
01N0023-012.001 12	U234	NA	NA	6.65	26.3	NA	NA	
East Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1710	0.1460			2	1	**Transuranic**
	Am241	0.1820	0.0990			2	1	3
01N0023-013.001 13	U234	NA	NA	2.51	26.3	NA	NA	
Ceiling	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0900	0.0810			0	0	**Transuranic**
	Am241	0.0300	0.0800			0	0	0
01N0023-014.001 14	U234	NA	NA	10.63	26.3	NA	NA	
Ceiling	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1440	0.0780			2	1	**Transuranic**
	Am241	0.4030	0.0840			6	1	8

Survey Area: AM	Survey Unit: 771058	Building: 774
Description: Room 342		

Media Samples Data Sheet

Site Sample ID / Nbr Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in^2)	Sample Nuclide ($dpm/100cm^2$)	Sample Nuclide MDA ($dpm/100cm^2$)	Sample Total ($dpm/100cm^2$)
01N0023-004.001 15 Ceiling	U234	NA	NA	6.84	26.3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.1060	0.1420			1	1	**Transuranic**
	Am241	0.0300	0.0820			0	1	1

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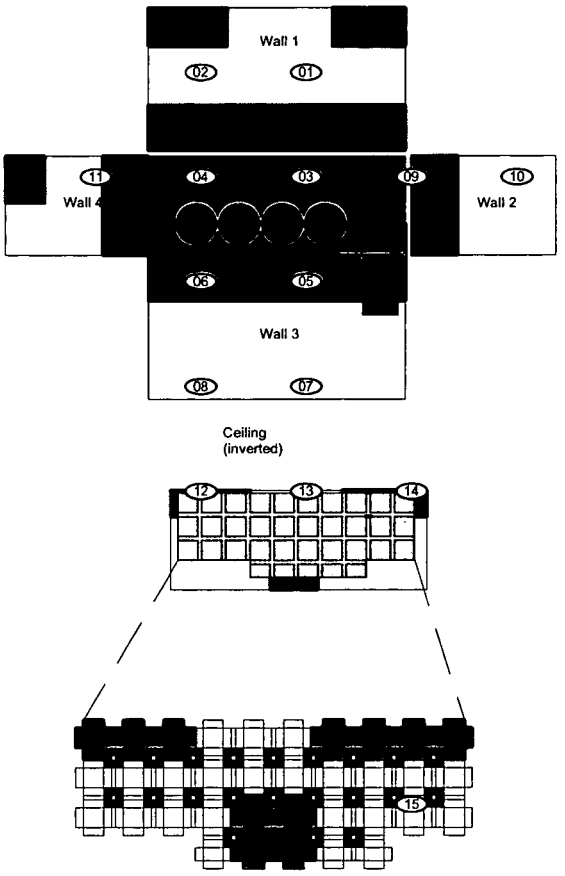
RADIOLOGICAL CLOSEOUT SURVEY FOR THE 771 CLUSTER

Survey Area: AM **Survey Unit: 771058** **Classification: 2**
Building: 774
Survey Unit Description: Room 342

Total Floor Area: 31 sq. m **Total Area: 245 sq. m** **Grid Size: 4m x 4m**

SURVEY UNIT 771058 - MAP 1 OF 1

Room 342



Hand Scans

Monitor Scans

Total Scanned Area = 44%

0 FEET 30

0 METERS 10

N

SURVEY MAP LEGEND
- # Smear & TSC Location
- # Smear, TSC & Sample Location
- Open/Inaccessible Area
- Area in Another Location

ATTACHMENT G

Data Quality Assessment

DATA QUALITY ASSESSMENT (DQA)

VERIFICATION & VALIDATION OF RESULTS

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question. The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically beryllium).

DQA criteria and results are provided in a tabular format for each suite of surveys or chemical analyses performed; the radiological survey assessment is provided in Table E-1, and beryllium in E-2. A data completeness summary for all results is given in Table E-3.

All relevant Quality records supporting this report are maintained in the B774 Interior Characterization Project Files. This report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators. All radiological data are organized into Survey Packages, which correlate to unique Survey Units. Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location.

Survey designs were implemented based on the transuranic limits used as DCGLs in the unrestricted release decision process. All survey results were evaluated against, and were less than the Transuranic $DCGL_w$ (100 dpm/100cm^2).

SUMMARY

In summary, the data presented in this report have been verified and validated relative to the quality requirements and project decisions as stated in the original DQOs. All data are useable based on qualifications stated herein and are considered satisfactory without qualification. All media surveyed and sampled yielded results less than their associated action levels and with acceptable uncertainties.

Based upon an independent review of the radiological data, it is determined that the original project DQOs satisfied site PDSP guidance. All facility contamination levels were below applicable unrestricted release levels, except as noted above. Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable procedures, survey units were properly designed and bounded, and instrument performance and calibration were within acceptable limits.

Chain of Custody was intact; documentation was complete, hold times were acceptable (where applicable,) and packaging integrity/custody seals were maintained throughout the sampling/analysis process. Level 2 Isolation Controls have been implemented to prevent the inadvertent introduction of further contamination into the facility. On this basis, the B774 Interior meets the RLCP and PDSP DQO criteria with the confidences stated herein.

Table E-1 V&V of Radiological Surveys – B774 Interior

V&V CRITERIA, RADIOLGICAL SURVEYS		K-H RSP 16.00 Series MARSSIM (NUREG-1575)		
QUALITY REQUIREMENTS				
	Parameters	**Measure**	**Frequency**	**COMMENTS**
ACCURACY	initial calibrations	80%<x<120 %	≥1	Calibration using Alpha Group procedure and approved technicians.
	daily source checks	80%<x<120 %	≥1/day	Performed daily/within range.
	local area background: Field	typically < 10 dpm	≥1/day	All local area backgrounds were within expected Ranges <10 cpm
PRECISION	field duplicate measurements for TSA	≥5% of real survey points	≥100% packages	N/A
REPRESENTATIVENESS	MARSSIM methodology: Survey Unit 771048/771054/771056/771057/771058	statistical	NA	Random w/ statistical confidence.
	Survey Maps	NA	NA	Random measurement locations controlled/mapped to ±1m.
	Controlling Documents (Characterization Pkg; RSPs)	qualitative	NA	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files); thorough documentation of the planning, sampling/analysis process, and data reduction into formats.
COMPARABILITY	units of measure	dpm/100cm^2	NA	Use of standardized engineering units in the reporting of measurement results.
COMPLETENESS	Plan vs. Actual surveys usable results vs. unusable	>95% >95%	NA	
SENSITIVITY	detection limits	TSA: ≤50 dpm/100cm^2 RA: ≤10 dpm/100cm^2	all measures	MDAs ≤ ½ DCGL$_w$ per MARSSIM guidelines.

Table E-2 V&V of Beryllium Results – B774 Interior

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		
BERYLLIUM	Prep: NMAM 7300 METHOD: OSHA ID-125G	LAB ---->	Johns Manville Corp. Denver, Co.	
QUALITY REQUIREMENTS		RIN ---->	RIN 774-03-03-2004-76-121 thru 143 RIN 774-04-07-2004-76-101 thru 112 and 113B thru 114B	
		Measure	Frequency	COMMENTS
ACCURACY	Calibrations Initial	linear calibration	≥1	No qualifications significant enough to change project decisions, i.e., classification of Type 3 facilities confirmed. All results were below associated action levels.
	Continuing	80%<%R<120%	≥1	
	LCS/MS	80%<%R<120%	≥1	
	Blanks - lab & field	<MDL	≥1	
	interference check std (ICP)	NA	NA	
PRECISION	Laboratory Control Sample Duplicate	80%<%R<120% (RPD<20%)	≥1	
	field duplicate	all results < RL	≥1	
REPRESENTATIVENESS	COC	Qualitative	NA	
	hold times/preservation	Qualitative	NA	
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative	NA	
COMPARABILITY	measurement units	ug/100cm^2	NA	
COMPLETENESS	Plan vs. Actual samples usable results vs. unusable	>95% >95%	NA	
SENSITIVITY	detection limits	MDL of 0.10ug/100cm^2	all measures	

Table E-3 Data Completeness Summary – B774 Interior					
ANALYTE	**Building/Area /Unit**	**Sample Number Planned (Real & QC)[A]**	**Sample Number Taken (Real & QC)**	**Project Decisions (Conclusions) & Uncertainty**	**Comments (RIN, Analytical Method, Qualifications, etc.)**
Beryllium	B774 Interior	32 biased (interior) 4 Blanks	32 biased (interior) 4 Blanks	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 774-03-03-2004-76-121 thru 143 RIN 774-04-07-2004-76-101 thru 114 No results above action level (0.2ug/100cm^2) or investigative level(0.1ug/100cm^2).
Radiological	Survey Area: AM Survey Unit: 771058 B774 Rm. 342	15 α TSA (15 – Random/Systematic) and 15 α Smears (15 - Random/Systematic) 2 QC TSA 15 Media 44% scanned	15 α TSA (15 – Random/Systematic) and 15 α Smears (15 - Random/Systematic) 2 QC TSA 15 Media 44% scanned	No elevated contamination at any location; all values below PDS unrestricted release levels No result above action level	Transuranic DCGLs RIN Sample numbers: 01N0023-001.001 thru 01N0023-004.001, 04Z0383-001.001 thru 04Z0383-003.001, 01N0023-007.001 thru 01N0023-014.001 No result above action level
Radiological	Survey Area: AM Survey Unit: 771057 B774 Rm. 441	15 α TSA (15 – Random/Systematic) and 15 α Smears (15 - Random/Systematic)	15 α RSA (15 – Random/Systematic) and 15 α Smears (15 - Random/Systematic)	No elevated contamination at any location from DOE added isotope; all values below PDS unrestricted release levels	Transuranic DCGLs RIN Sample number 01N0009-001.001 thru 01N0009-017.001

Table E-3 Data Completeness Summary – B774 Interior

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
		2 QC TSA 17 Media 33% Scanned	2 QC TSA 17 Media 33% Scanned	No results above action level	No results above action level
Radiological	Survey Area: AM Survey Unit: 771056 B774 Rm. 341	15 α TSA (15 – Random/Systematic) and 15 α Smears (15 - Random/Systematic) 2 QC TSA 15 Media 39% Scanned	15 α TSA (15 – Random/Systematic) and 15 α Smears (15 - Random/Systematic) 2 QC TSA 15 Media 39% Scanned	No elevated contamination at any location from DOE added isotope; all values below PDS unrestricted release levels No result above action level	Transuranic DCGLs RIN Sample number 01N0008-001.001 thru 01N0008-015.001 No result above action level
Radiological	Survey Area: AM Survey Unit: 771054 B774 Rm. 241	42 α TSA (42 – Random/Systematic) and 42 α Smears (42 - Random/Systematic) 2 QC TSA 100% Scanned	42 α TSA (42 – Random/Systematic) and 42 α Smears (42 - Random/Systematic) 2 QC TSA 100% Scanned	No elevated contamination at any location from DOE added isotope; all values below PDS unrestricted release levels No result above action level	Transuranic DCGLs No result above action level

Table E-3 Data Completeness Summary – B774 Interior

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area: AM Survey Unit: 771048 B774 Stairwell	15 α TSA (15 – Random/Systematic) and 15 α Smears (15 - Random/Systematic) 2 QC TSA 15 Media 100% Scanned	15 α TSA (15 – Random/Systematic) and 15 α Smears (15 - Random/Systematic) 2 QC TSA 15 Media 100% Scanned	No elevated contamination at any location from DOE added isotope; all values below PDS unrestricted release levels No result above action level	Transuranic DCGLs RIN Sample number 03Z2110-001.001 thru 03Z110-015.001 No result above action level

ATTACHMENT H

Historical Review

Building 774 Interior
Historical Review
April 14, 2004

Facility ID: Buildings 774, Interior (Survey Area AM)

Anticipated Facility Type (1, 2, or 3): Type 3.

Physical Description: The interior of the 774 Building encompasses approximately 3786m^2. The primary material used in its construction is painted poured concrete with intermittent use of painted cinder block.

Historical Operations:
This survey unit consists of structural surfaces only. The Building 774 Addition, built in 1973, was known as the plenum building because of the 2 plenums that supplied and filtered air for the rooms and the glove boxes/vent hoods for B774. These plenums are located in rooms 441 and 341. Room 342 had 4 vertical tanks where various solutions were loaded for operations. Rooms 441, 341 and 342 were not posted/controlled as a Contamination Area/Airborne Radioactivity Area during operations. Room 241 and the South Stairwell were controlled as process areas because they housed reagent and precipitation tanks.

Current Operational Status: Building 774 is no longer in operation.

Contaminants of Concern

Asbestos
None

Beryllium (Be)
The interior of Rooms 341 and 441 have never been posted/controlled as a Beryllium (Be) Area, based on historical and existing classifications and historical use. Personnel interviews confirm that these rooms were never Beryllium areas. Room 241 was controlled as a Beryllium Regulated Area (BRA) during plasma arc size reduction of the tanks in the room. All areas have since been de-posted from BCA/BRA.

Lead

None

RCRA/CERCLA Constituents
Personnel interviews indicate that RCRA storage units were never located in this area.

A visual inspection of the 774 interior 771774 Environmental Compliance/Industrial Hygiene personnel verified the absence of hazardous waste residuals and/or stains on the floor/concrete slab, walls, or ceiling. As a result of these observances, it has been determined that no additional sampling for RCRA/CERCLA constituents is required.

PCBs
Free-flowing or exposed PCBs have never been used or transferred on the interior of 774.

Radiological Contaminants
The contaminants of concern for the 771 project, including all areas of Buildings 771 and 774, are transuranic alpha-emitting radioisotopes (including Pu-238, Pu-239/240, Pu-242, and Am-241). Based on findings documented in Radiological Engineering TBD-00161, Rev. 0, alpha-only surveys assure that the unrestricted-release limits for any other isotopes that may exist in Building 771/774 will not be exceeded.

Environmental Restoration Concerns
No Individual Hazardous Substance Sites (IHSS) exist beneath the Building 774 1973 Addition.

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Building 774 Interior
Historical Review
April 14, 2004

Additional Information
None

References
(1) *B771 and B774 Hazards Characterization Report for the 771 Closure Project*, dated June 12, 2001, Revision 0.
(2) *Building 771/774 Cluster Closure Project Reconnaissance Level Characterization Report*, dated August 8, 1998, Revision 2.

Further Actions
Complete the PDS process.

Prepared By: T. Fontaine / [signature] / 4-14-04
Name Signature Date

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ATTACHMENT I

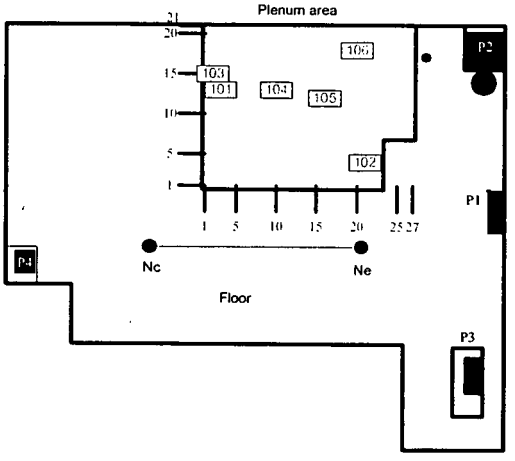
Chemical Data Summaries and Sample Maps.

BERYLLIUM CHARACTERIZATION SURVEY FOR THE 771 CLUSTER

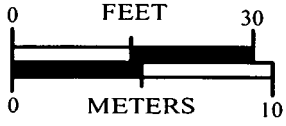
Survey Area: AM **Survey Unit:** 771056 Be **Classification:** NA
Building: 774
Survey Unit Description: Room 341 Filter Plenum

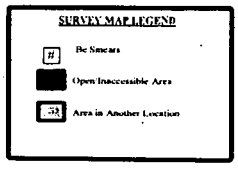
Total Floor Area: 524 sq. ft. **Total Area:** NA **Grid Size:** NA

SURVEY UNIT 771056 Be - MAP 1 OF 1



Sample location	Sample Number	Sample Result
101 thru 106	774-04-13-2004-76-101 thru 106	<0.1 ug/100 sq. cm
Blanks	774-04-13-2004-76-107B thru 108B	<0.1 ug/100 sq. cm





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Industrial Hygiene Information System
Surface Sample Report

IHISR_SURFACE_SAMPLE
Date: 04/14/2004

RIN: 04D0547

Sample Number/Type:	774-04132004-76-101	WIPE	Hygienist: TONYA BEAN
Location Info:	FINAL SURVEY ON FLOOR 341 PLENUM		
Room No:	341		
		Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)
		Concentration:	< 0.1000 _ UG/100CM2

Sample Number/Type:	774-04132004-76-102	WIPE	Hygienist: TONYA BEAN
Location Info:	FINAL SURVEY ON FLOOR 341 PLENUM		
Room No:	341		
		Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)
		Concentration:	< 0.1000 _ UG/100CM2

Sample Number/Type:	774-04132004-76-103	WIPE	Hygienist: TONYA BEAN
Location Info:	FINAL SURVEY ON FLOOR		
Room No:	341		
		Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)
		Concentration:	< 0.1000 _ UG/100CM2

Sample Number/Type:	774-04132004-76-104	WIPE	Hygienist: TONYA BEAN
Location Info:	FINAL SURVEY ON FLOOR 341 PLENUM		
Room No:	341		
		Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)
		Concentration:	< 0.1000 _ UG/100CM2

Sample Number/Type:	774-04132004-76-105	WIPE	Hygienist: TONYA BEAN
Location Info:	FINAL SURVEY ON FLOOR 341 PLENUM		
Room No:	341		
		Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)
		Concentration:	< 0.1000 _ UG/100CM2

Sample Number/Type:	774-04132004-76-106	WIPE	Hygienist: TONYA BEAN
Location Info:	FINAL SURVEY ON FLOOR		
Room No:	341		
		Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)
		Concentration:	< 0.1000 _ UG/100CM2

Sample Number/Type:	774-04132004-76-107B	BLANK	Hygienist: TONYA BEAN
Location Info:			
Room No:			
		Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)
		Concentration:	< 0.1000 _ UG

Sample Number/Type:	774-04132004-76-108B	BLANK	Hygienist: TONYA BEAN
Location Info:			
Room No:			
		Analyte:	BERYLLIUM AND BE COMPOUNDS (AS BE)
		Concentration:	< 0.1000 _ UG

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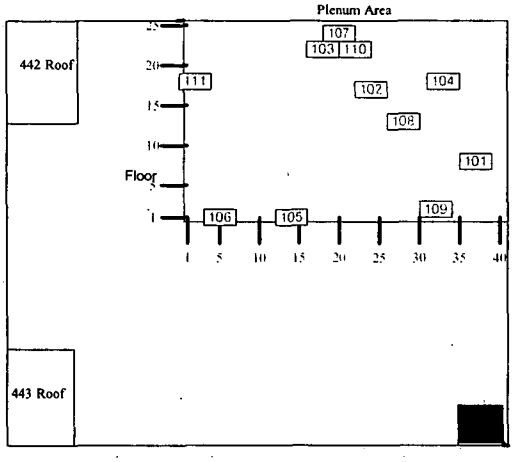
BERYLLIUM CHARACTERIZATION SURVEY FOR THE 771 CLUSTER

Survey Area: AM **Survey Unit: 771057 Be** **Classification: NA**
Building: 774
Survey Unit Description: Room 441 Plenum

Total Floor Area: 1015 sq. ft. **Total Area: NA** **Grid Size: NA**

SURVEY UNIT 771057 Be - MAP 1 OF 1



Sample location	Sample Number	Sample Result
101 thru 111	774-03-17-2004-76-101 thru 111	<0.1 ug/100 sq. cm
Blanks	774-03-18-2004-76-101B thru 102B	<0.1 ug/100 sq. cm

0 FEET 30
0 METERS 10

N

SURVEY MAP LEGEND
Be Smears
Open/Inaccessible Area
Area in Another Location

Industrial Hygiene Information System
Surface Sample Report

IHISR_SURFACE_SAMPLE
Date: 03/18/2004

RIN: 04Z1435

Sample Number/Type: 774-03172004-76-101 WIPE Hygienist: TONYA BEAN
Location Info: SURVEY UNIT 771056 WIPE ON FLOOR
Room No: 441
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 774-03172004-76-102 WIPE Hygienist: TONYA BEAN
Location Info: SURVEY UNIT 771056 WIPE ON FLOOR
Room No: 441
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 774-03172004-76-103 WIPE Hygienist: TONYA BEAN
Location Info: SURVEY UNIT 771056 WIPE ON FLOOR
Room No: 441
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 774-03172004-76-104 WIPE Hygienist: TONYA BEAN
Location Info: SURVEY UNIT 771056 WIPE ON FLOOR
Room No: 441
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 774-03172004-76-105 WIPE Hygienist: TONYA BEAN
Location Info: SURVEY UNIT 771056 WIPE ON FLOOR
Room No: 441
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 774-03172004-76-106 WIPE Hygienist: TONYA BEAN
Location Info: SURVEY UNIT 771056 WIPE ON FLOOR
Room No: 441
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 774-03172004-76-107 WIPE Hygienist: TONYA BEAN
Location Info: SURVEY UNIT 771056 WIPE ON FLOOR
Room No: 441
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 774-03172004-76-108 WIPE Hygienist: TONYA BEAN
Location Info: SURVEY UNIT 771056 WIPE ON FLOOR
Room No: 441
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 774-03172004-76-109 WIPE Hygienist: TONYA BEAN
Location Info: SURVEY UNIT 771056 WIPE ON FLOOR
Room No: 441
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 774-03172004-76-110 WIPE Hygienist: TONYA BEAN
Location Info: SURVEY UNIT 771056 WIPE ON FLOOR
Room No: 441
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 774-03172004-76-111 WIPE Hygienist: TONYA BEAN
Location Info: SURVEY UNIT 771056 WIPE ON FLOOR
Room No: 441
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG/100CM2

Sample Number/Type: 774-03182004-76-101B BLANK Hygienist: TONYA BEAN

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Industrial Hygiene Information System
Surface Sample Report

IHISR_SURFACE_SAMPLE

Date: 03/18/2004

RIN: 04Z1435

Sample Number/Type: 774-03182004-76-101B BLANK Hygienist: TONYA BEAN
Location Info:
Room No:
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG

Sample Number/Type: 774-03182004-76-102B BLANK Hygienist: TONYA BEAN
Location Info:
Room No:
Analyte: BERYLLIUM AND BE COMPOUNDS (AS BE)
Concentration: < 0.1000 _ UG

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